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Leading Articles

A Few Don'ts*

By G. W. BLANCHE, D. V. M., Belle Plaine, Iowa

Without wishing to be considered in the least pessimistic, I will endeavor to briefly point out a few things which observation and experience have taught me *not* to do.

Don't be too positive or hasty in making a diagnosis. I realize it to be a popular idea among the laity that a veterinarian should be able to "look through an animal." We often hear our clients tell, with much gusto, how old "Doc" So-and-So stepped into the barn, and, while still twenty feet or so from the patient, positively diagnosed the ailment and either gave a rosy-hued prognosis with a promise that the patient would be up and eating in thirty minutes, or to have a dead horse at some other definitely fixed time, ranging from five minutes to the afternoon of the second day.

I have noticed, however, that it is not the lightning diagnostician who gains or holds the confidence of his clients. While he occasionally "makes a lucky hit," he more often "falls down" (pardon the slang), as did the old gentleman of the type referred to above, who, upon being

*Read at annual meeting, Iowa Veterinary Association, Marshalltown, Jan., 1911.

summoned to my father's barn to see a mare showing considerable distress, came rushing in, and after a very hasty examination, without waiting to get any history of the case, unhesitatingly pronounced it to be a case of rupture of the second stomach, and gave the mare just forty-five minutes to live.

Before the time limit had expired, the mare was standing quietly, though anxious, and a wobbly-legged but energetic colt was making frantic efforts to preserve his equilibrium and connect with his fountain of nourishment. I was only twelve years old at the time, but it taught me a lesson in diagnosis.

Don't let your clients diagnose cases for you. Young practitioners are often tempted to let an experienced stockman, especially if he be a good client, dictate to a certain extent in both diagnosis and treatment. Take time to make your diagnosis, and then after briefly but clearly explaining the case to the client, either proceed to treat it your way, or politely decline to treat it at all.

Don't make promises which you cannot fulfill. If a client sends in a hurry-up call and asks how soon you will come, tell him as nearly as possible. Don't say, "right away," when you know you will be delayed an hour. This may at first thought seem to be a good way to send calls to a competitor, but a thorough trial has convinced me to the contrary, for no one appreciates punctuality more than a client waiting for the doctor. "Hope deferred maketh the heart sick."

Don't attempt to injure the reputation of your fellow practitioners. If you cannot speak well of them say nothing.

Don't be afraid that your clients may gain a little medical and surgical knowledge and that you may thereby lose fees. Right here I would like to say a word in regard to agricultural college graduates and those who attend farmers' short courses. Some veterinarians strongly disapprove of giving veterinary instruction in these courses. Gentlemen, be reasonable! Does a thorough course in hygiene, dietetics and emergency remedies given a high school student make him feel any less dependent upon the trained physician? You know it does not. Neither does the training given along veterinary lines in the agricultural colleges cause its recipients to have less confidence in and need for the qualified veterinarian. The agricultural college graduates and short course students in my territory are the best clients I have. I often wish we could all practise in communities made up entirely of this class or those similarly instructed. We would not then have to contend with the cow-dung poultice or with powdered glass blown into some poor animal's eye "to cut the scum off," and when we performed an operation or gave medical treatment, a client having some knowledge of bacteriology and hygiene would see that our instructions in regard to after-treatment were carried out to the letter.

A large percentage of the "troubled-with-his-water" cases would vanish, and while we should be less often in demand to pull wolf teeth,

or help poor bossy find her mislaid cud, our practice would be more pleasant as well as lucrative.

I do not wish to be understood to mean that all of our clients lacking technical training harbor such ridiculous ideas as these, but such ideas are commonly held and often among people fairly well informed along other lines.

Don't be cruel to your patients. Without a desire to pose as a reformer I emphatically denounce the practice of performing painful operations without the use of either local or general anesthetics. I realize that we are all guilty to a certain extent as it is somewhat inconvenient to produce general anesthesia without the aid of experienced assistance, but our patients as a class are such good subjects for anesthesia, that it is not a very difficult task for anyone with reasonable intelligence to administer chloroform or ether under the directions of the surgeon.

The matter of expense need never for a moment be considered, as three to five ounces of chloroform is sufficient for a horse unless the operation be very prolonged.

Aside from the humane considerations, which should at all times be sufficient grounds for the use of anesthetics, the surgeon is amply repaid for his trouble and expense by having his patient perfectly quiet, which not only saves time, but favors a skillful operation. *Don't* join that fossilized class of veterinarians, fortunately growing smaller day by day, who argue that the administration of the anesthetic is as distressing to the patient as the operation. If you do, be consistent enough to follow that theory if you are ever so unfortunate as to require a major surgical operation upon yourself.

Local anesthesia properly administered suffices in many cases, and no excuse can be given for neglecting to use this method for alleviating pain, yet how many rarely resort to it.

It is not the man in general alone against whom this criticism of unthinking cruelty is to be charged. Personal observation, as well as evidence gained from authoritative sources establishes the fact that in a number of veterinary colleges in the United States extremely painful operations are almost daily performed without the use of anesthetics, either local or general. A dose of morphine or chloral is usually given, which serves to ease the conscience of the surgeon, if he has any. It would seem that where every facility, such as assistants, equipment and unlimited means exist, every effort should be made to operate not only skillfully but painlessly, so that the student shall be thoroughly instructed and encouraged to do likewise when he enters practice.

A SUBSCRIBER asks for the formula of Gombault's Caustic Balsam. Will some reader furnish this formula?

Contribution to the Study of Poisoning by Mio Mio

By DRS. E. A. BANZA AND H. HEQUITO, Montevideo, Uruguay
Translated by O. E. TROY, D. V. S, Kansas City, Missouri

Poisonings of this nature, very commonly observed in our practice in cattle and sheep, are always attributed to the ingestion of what is vulgarly called the bad weed (yerba mala) group of plants, eminently toxic, among which, occupying a preferential plaçe, is the one known by the name of "Mio Mio," a plant very diffuse in this country. Belonging also to this group of toxic plants are those known by the names black cherry, duraznillo negro (Cestrum parqui), the wild melon, sandia cimarrona (Cururbitella duriaei) and the sepo (Oneidium vesperium), all of which when ingested by cattle or sheep cause a toxic enteritis, with analogous symptoms in most of the cases, and frequently with a fatal termination. But it is above all the first of these plants, the mio mio (Bacheris condifolia), which has caused, much too often, the death of many animals, principally among breeding stock imported from Argentine Republic that were raised on ranges where this plant does not exist. One of these cases we had the opportunity to observe.

The animal referred to was a cow from Argentine, six years of age, which had been brought by her owner to his estate on the range located in the department (state) of Canelones; the cow had been in perfect health during several months, grazing in a pasture that contained no mio mio. Having changed pastures, they noticed the same morning (three hours after turning her to pasture) a certain ailing, which she showed for some minutes, until she died at 11 a. m.

The owner, in his desire to inquire into the cause of death, solicited the professional services of one of us but feared that he dealt with carbunclo bacteridiano (Anthrax); the post-mortem examination gave the following results:

Natural openings, skin, hair, conjunctivæ, subcutum, large muscles, blood and thorax normal. *Abdominal Cavity:* The contents of the rumen and stomach were semi-liquid, mixed with the half-digested remains of the toxic plant. In the pouch of the left sack extending over an area sixty centimeters square, was noticed lesions of acute gastritis, the mucosa appeared eroded, denoting clearly the energetic action of the poison. The reticulum and omasum presented analogous lesions, the abomasum was completely congested.

Intestines: The first part (duodenum) presented a uniform reddish color which demonstrated that an acute process was present, the afferent vessels of this region were also congested. The large intestine seemed normal, as did also the liver and spleen.

Urinary Apparatus: Kidneys: The macroscopical examination showed an intense congestion of these organs; they appeared at first sight increased in volume. The capsule, which came off easily, brought to view a series of subcapsular petechiæ among the vascular terminations which form the pyramids of Verheyen (Ferrein Strangeway); to the touch they seemed friable and without consistency, and when cut the separation of the corticle and medullar zones were indistinct, presenting a uniform dark color. The hylus showed some congested areas, the ureters appeared normal, the bladder showed hemorrhagic areas and contained about 130 Cc. of limpid urine.

Microscopic Examinations: From paraffin preparations of renal tissue, sections were made, stained with hemotoxlin, eosin; when examined with a low power lens (100 diameters) we observed the following lesions:

Radiating Arteries: Very much dilated with sanguinous residue in their interior, we could see uniform and complete desquamation of endothelial cells. The capillaries of the corticle zone presented great dilation, to a diameter of from fifteen to twenty-five microns, and were replete with blood, which formed solid columns that separated and compressed the convoluted tubes. Ruptures appeared at various points of these vessels, giving rise to small hemorrhagic foci, which united in some parts with other foci, causing at places the destruction of the parenchyma.

Glomeruli: The vascular glomerular apparatus was much dilated; in certain points there appeared ruptures of Bowman's capsule and glomerular hemorrhages. The epithelium of Bowman's capsule in all of the glomeruli was totally desquamated.

Convoluted Tubules: With low power (100 diameters) these presented themselves full of cellular elements, with higher power (500 diameters) their contents proved to be nothing but cells. Throughout the irregular and diffuse convolutions there appeared free granular protoplasm without visible nuclei; we did not find hyalin casts.

Interstitial Tissue: This structure was more visible than ordinary, but without signs of hypertrophy.

Medullar Zone: Congestion of blood-vessels and light epithelial desquamation; no hemorrhagic foci were observed.

The histologic lesions observed easily permit of a certain diagnosis; the lack of leukocytic infiltration, as also of hyaline casts, and the absence of lesions in the interstitial connective tissue, permits differentiation of these lesions from those which characterize interstitial or parenchymatous nephritis, either acute or chronic.

On the contrary the congestion of the organ and especially of the corticle zone where multiple small hemorrhages were seen, enables us to establish a diagnosis of acute congestion.

On account of the desquamation of Bowman's capsule and of the convoluted tubes, lesions which do not accompany typical nephritis,

we state without fear of doubt that the organ has served to eliminate a violent poison.

The conclusions at which we arrived may help to guide those who are interested in the study of toxic enteritis of this nature; the lesions observed in the histologic examination have been constant in cattle and sheep, dead undoubtedly from the consequences of ingesting the Bacheris condifolia.—*Revista de Medicina Veterinaria*, de la Escuela de Montivideo.

Trypanblue in Infectious Anemia

By A. W. WHITEHOUSE, V. S., Walden, Colorado

Infectious anemia of the horse clinically resembles a class of diseases which have been proven to be protozoan in origin; the virus is filterable in some stages, and the organism has not been identified. With these premises we thought it worth while to experiment with a remedy that is a specific in two undoubtedly protozoan diseases.

G. H. F. Nuttall of Cambridge, England, reported more than a year ago the use of trypanblue in the treatment of South African piroplasmosis of cattle, and in a similar disease in dogs; the results were uniformly successful where the patients were not in the last stages of the disease. These results were obtained from both field and inoculated cases in South Africa, and from both imported and inoculated cases in England in both classes of animals.

I used Nuttall's technic in the first (successful) case and raised the dose slightly in two others—both failures.

Case 1 was presented in June, 1910, before the trypanblue had reached me. She was a large dun mare, about eight years old, with a foal by her side, and from the history had probably been infected for seven or eight months. She showed severe anemia, swaying gait, few petechiae in the vulva, no edema, good appetite, weak pulse, about sixty-five to seventy per minute, moderate jugular pulse, and a gradually increasing emaciation. I treated her for about a month on my usual treatment, arsenic, calomel, tartar emetic, nux and cinchona (she was getting about 15 grains of white arsenic daily), and she grew gradually worse. At the same time I put a brown mare from the same herd, but not nearly so badly affected, on the same treatment.

About July 15th, I gave the first animal a dose of trypanblue, using Nuttall's technic for cattle; three grains of the dye dissolved in 200 Cc. of sterilized cold water; the solution then brought up to body temperature and injected at one time, into the jugular vein, aseptic precautions to the minutest detail having been observed.

The result was very alarming. The mare became uneasy and excited, repeatedly lying down and rising, simulating the symptoms of

abdominal pain. She micturated frequently, the urine being rose-colored, and showed a pulse of about 100 beats per minute, hard and full, the temperature an hour later was 105° F. At this time the staggering gait had disappeared.

I had an opportunity to see her the next morning, when the same symptoms prevailed in a lesser degree, but as she is very inaccessible I have not seen her since. The owner, however, reports that during the day following the injection of the trypanblue, typical swamp fever symptoms returned, and that for a week they were worse than ever before. After this she began to improve, and he considers that by October she had made a perfect recovery. No further treatment of any kind was given either of the mares, and the brown mare which had not received an injection of trypanblue died at the end of September.

Judging that the severe symptoms following administration of the drug were due to solid particles contained in the injection obstructing capillaries, I prepared some of the trypanblue solution as follows: Three grains of trypanblue dissolved in 200 Cc. physiologic salt solution, then filtered and finally sterilized in the bottle from which I injected it.

Case 2.—A seven-year-old chestnut saddle gelding. The mucous membranes were extremely anemic without petechia; there was edema of the prepuce and of the abdomen; there was no appetite, and the horse could hardly keep his balance. Neither the owner nor I thought he could live more than three days.

I gave him via the jugular 125 Cc. of the filtered trypanblue solution. It produced no apparent effect whatever. The animal died three days later.

Case 3.—This was a hyperacute case. The owner had a number of horses running in a meadow without feed, they had lost some flesh, but were strong. This gray, ten-year-old gelding was noticed, December 31, 1910, to have lost more flesh than any of the others and was roped out of the bunch and led up to me for dental work. He came up on the trot and was bright and active, and I had finished floating his teeth (which needed the work) before I noticed anything amiss. His mouth was quite pale and so were the conjunctivæ; the Schneiderian membrane (as often occurs in these cases) being of a fairly healthy red. The temperature was 100.5° F. Pulse sixty-five per minute, strong, with a thrill. In the long hair forward of the prepuce I found a little edema and so sent word to the owner that I suspected the animal had pernicious anemia and that I would like to treat him experimentally.

The owner sent for me two days later, when I saw that disease had made astonishing progress. The temperature was 104.2° F.; the pulse eighty-eight, respiration eighteen and very labored. He staggered very badly. Peripheral blood was examined, and gave hemoglobin by Tallquist test forty percent, erythrocytes 1,265,000 crenated, micro- and megalocytes. Differential count lymphocytes thirty-seven percent

large mononuclears twenty-three percent, polymorphonuclears thirty-eight percent, eosinophiles two percent.

Blood smears were made with very great difficulty as the temperature was from 20 to 40° F. below zero during the rest of the animal's life. No petechiae were observable at any time during the disease.

The next day I gave 200 Cc. of the filtered solution of trypanblue, the only effect, good or bad, being to run the pulse up from ninety-four to ninety-eight. The animal died the night of the following day; the fifth day after I had thought him well enough to dress his teeth, and the third day of the acute symptoms. I took smears from the jugular at the time I injected the trypanblue, getting a differential count of lymphocytes 10.5 percent, large mononuclears fourteen percent, polymorphonuclears seventy-three percent, eosinophiles one percent, mast cells one and five-tenths percent. I did not count the erythrocytes, as I would not risk my blood counter again in the cold. The horse also received nuclein solution during the last two days and arsenic during the last three days. On account of the desperate cold I did not hold an autopsy.

In the smears from this horse taken on both days I have found bodies which were seemingly parasites, but which I thought worth sending to Dr. Kaupp of Fort Collins for examination.

In summing up, I feel tolerably certain that Case No. 1 recovered solely owing to the trypanblue, as I have never before seen recovery when arsenic failed. Whether the want of effect in No. 2 and No. 3 was because of the filtering, or because these cases were acute, and whether swamp fever is one disease or five or fifty are questions that are too difficult for me to answer.

Immunity*

By HERBERT F. PALMER, B. Sc., D. V. S., Chicago, Illinois

Before the closing days of the seventeenth century, there was born in a small English town a man who was the first to demonstrate immunity. In 1770 a woman said, in speaking of smallpox, "I cannot take that disease, for I have had cow pox." But to Edward Jenner belonged the distinction of first proving it. In 1796 he inoculated the boy Phipps with matter taken from the hand of a girl who had been directly infected by a cow. In these earlier days cow pox was thought to be a disease due to infection from the heel of a horse affected with grease. Since that time comparatively little has been learned about the old disease, smallpox, but a great and forward movement has taken place regarding immunity.

*Read at semi-annual meeting, Missouri Valley Veterinary Association, Kansas City, Jan., 1911.

While Jenner in 1796 was the first to establish immunity, it remained for Pasteur in 1877 to give it a scientific demonstration. He observed that susceptible animals inoculated with cultures of the anthrax bacillus mixed with other bacteria did not acquire the disease.

The advancement made in the study of immunity really dates from the discovery of the germs that produce disease. While Aristotle had an inkling of the truth, bacteriology is a youth of less than forty summers. The first step was proven when it was shown that minute forms of life, bacteria, if you please, produced fermentation of various kinds and that these same small plants or animals were the chief agent in putrefaction. It is now known that bacteria are distributed throughout the animal and vegetable world. The saprophytes are essential to continuation of life; the pathogenic or death-dealing bacteria are comparatively few.

There are three great classes of bacteria concerned in the question of immunity. One of these must needs grow within the living body, one is indifferent as to its host, growing and developing either within or outside the living body, and the third grows outside of the body in dead organic matter.

Today we are but really started in this great subject, as there are doubtless many infectious diseases now but little understood which are caused by an ultramicroscopic virus, a germ so small that none of our high powers of magnification make it possible for us to see them, and they are known only by their works.

So many of the terms used to consider the question of immunity have been so twisted that their primary meaning has been lost sight of. To avoid confusion it were well to define a few of these general terms.

A *toxin* is a poison secreted by the pathogenic bacteria, while the material that may be used to counteract this poison is an antitoxin. An acid counteracts an alkali, and like unto these are the toxins and antitoxins, one counteracts the other.

An *antitoxin* depends on the germ for its development, hence if there is no germ there is no antitoxin—understand me clearly—there is no true antitoxin where germs cannot be isolated and grown. We may, however, use an antitoxin of one disease to counteract to a certain extent the toxin of another germ, as it has been found that any antitoxin possesses certain power over any bacterial poison. This is taken advantage of in the manufacture of a distemper antitoxin for the horse.

A *serum* is the liquid part of the blood taken from an animal. It is generally spoken of as from an animal that has received such a course of injections or treatment that a specific serum is obtained, as antidiphtheritic serum.

The word *vaccine* has been derived from the Latin word vacca (cow) on account of its connection with cow pox. As now used, a vaccine is an agent containing living bacteria in an attenuated form.

A *bacterin*, although often spoken of as a serum or a vaccine, is neither, as it contains no living germs, but the dead germs. Note carefully the three classes. A *serum* should contain no germs, a *vaccine* is useless unless germs alive and attenuated are present, while a *bacterin* contains the germs, but all should be dead. *Vaccines* are generally prepared outside of the human body, while *antitoxins* can only be prepared in the animal body.

An *opsonin* is a substance contained in the blood which prepares bacterin to be taken up by phagocytes. A measure of this gives us the opsonic index.

Immunity has been defined as the power of an animal to resist the invasion of pathogenic bacteria. It may be peculiar to species, races or individuals, and it may also be modified by special circumstances, as an animal normally susceptible to a certain disease may resist this same disease if its environment is changed, and *vice versa*.

For example, Freidberger and Frohner state that the inoculation of horses, asses and white rats by blackleg produces only a local reaction in the form of a swelling. Herzog says blackleg affects cattle and occasionally other animals like sheep and hogs, while the Bureau of Animal Industry say that man, horses, hogs, cats and fowls appear to be immune. However, I have seen donkeys inoculated and die with blackleg injections and cause of death clearly shown to be due to blackleg. Simply a case of changed conditions.

Several theories have been advanced as to the manner of obtaining immunity, but we owe to Metchnikoff the first serious attempt to explain the resistance of the body against bacterial invasion.

Pasteur and Chaveau considered the animal body a mere culture medium, while Metchnikoff formulated the conception of an active bodily defense originating in the cells.

Metchnikoff first propounded his *phagocytic theory* in 1882. According to this theory the leucocytes attack and devour any invading organism which they may meet and thus rid the body of the parasites. When they have enveloped and thus destroyed all the bacteria which have gained a footing in the body, the disease necessarily comes to an end. The defense of the animal economy is due entirely to phagocytosis, and is entrusted especially to leucocytes.

If a bacterium enters the tissues these cells may at once make their way to the site of infection and proceed to ingest the bacteria and kill them intracellularly. In this way the animal recovers with or without transient illness.

There are three distinct stages of phagocytosis—approach of the phagocyte to the bacterium, inclusion and finally digestion or destruction. The leucocyte count thus becomes at times a prognostic indication.

With the announcement in 1892 by Behring that he had discovered antitoxins, arose the *chemical theory* of immunity.

The phagocytic theory of immunity is now accepted only as modified by the humoral theory by which it is claimed that certain substances in the fluids of the body constitute the important factor in opposing the invasion of bacteria. These substances have been given the name of alexins.

The *opsonic theory* recognizes phagocytosis as the essential means of defense, but considers the presence of the humoral element necessary to prepare bacteria for ingestion. Credit of the opsonic theory belongs essentially to Wright as in 1903, Wright and Douglas proved the presence in the normal serum of a humoral element which determines the occurrence of phagocytosis. Hence sprung the opsonic index as a guide in the application of the vaccine treatment he was beginning to develop.

In still later days come to us the *aggressin theory* of Bail in which he considers the aggressins are chiefly within the animal body and are supposed to act by negative chemotaxes upon the leucocytes and hence non-toxic. Immunity on the aggressin theory depends on the formation by the body of "anti-gressins" which once permit the phagocytes to exercise their normal functions of defense. In concluding, Andrews says, "Whether or not the microbe forms chemical aggressins, it at least exhibits structural adaptations which enable it to defy the defense of the body."

In viewing immunity from a chemical standpoint, Ehrlich evolved the *side-chain theory*, in which he assumes that a toxin has a side-chain which can attach itself to a side-chain of a cell. The names toxophore and haptophore was given to these steps, meaning "I carry," and "I join." Repair is thus considered to go beyond the original supply and the cell thus becomes furnished with increasing number of side-chains capable of fixing the particular toxin. So many side-chains are formed that some are cast off into the lymph and ultimately get into the blood. This free side-chain constitutes antitoxins. The antitoxin thus lies in wait, as it were, for the disease to approach.

Upon this theory may be explained the many causes of failure with some of our antitoxins. A disease, as for instance tetanus, is present, and the system so laden with toxin that any amount of antitoxin we may introduce will prove insufficient. On the other hand, if this antitoxin is already placed in the system as a prophlyactic, action is obtained at once upon the formation of any toxin and the cell thus wins out in the primary struggle.

Modern opinion has tended to swing back to the Metchnikoff theory, that of direct phagocytosis.

Andrews says, "These are demonstrable biological facts which admit of no doubt or cavil. They are naturally interpreted as indicating the formation of chemical substances, having the specific power of neutralizing the antigen, chemically or physically. How and where they are formed and how they interact with the antigen is still a matter of speculation."

The defensive agencies of the body on the whole are very adequate under normal conditions. While there are more or less bacteria ever present in our systems, the work of defense goes on without an obvious fuss or disturbance. But let this normal balance be broken, bacteria will then result in a secondary call to arms and the great life and death struggle ensues. If bacteria win, death; if antibodies, life, and a life insurance policy against this same disease.

Says one writer in speaking of antibodies: "Not until antibodies and their antigens have been brought under the dominion of weights, measures and chemical formulæ, not until their chemical and physical properties have been ascertained by methods lying outside biology, shall we be able to feel sure that we are dealing with things and not phantoms."

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Subscriptions from the United Kingdom should be sent to our London Office in care of Messrs. Bailliere, Tindal & Cox, 8, Henrietta Street, Covent Garden, London, England.
Address all communications to D. M. CAMPBELL, 1920 WILSON AVE., CHICAGO.

Last Call for the Veterinary Special

In order that the final arrangements may be brought to a close all veterinarians who intend to take advantage of the Veterinary Special are urgently requested to apply for reservations at the earliest possible moment. The train as previously announced will leave Chicago on the Wabash Railroad Monday evening, August 21st at 5:00 o'clock, arriving in Toronto at 7:00 the following morning, thus giving ample time to prepare for the opening session which convenes some three hours later.

Remember the invitation of the Chicago Veterinary Society to spend Monday as its guests. Those arriving at Chicago Monday morning are requested to call at the Chicago Veterinary College, 2537 State street, where a committee of the Society will be in waiting. The character of the entertainment will be decided at the next meeting of the Society too late to announce in this issue. It is, however, assured that the day spent at Chicago will be ever remembered as one of the interesting parts of the trip to the Forty-eighth Annual Meeting of the American Veterinary Medical Association.

The Toronto meeting will without doubt be the largest, the most important, the most instructive and the most interesting one that has

been held. The place of meeting, the ambitions of the local committee on arrangements, the distinguished members of the profession who will be present, and the character of the programme of each division, assure to the members, to the visitors and to their families a splendid week's entertainment.

The alumni of the Ontario Veterinary College, all of whom have fond recollections of the old landmark on Temperance street, now transformed, through the forward march of veterinary science into a splendid governmental institution should not miss this opportunity to visit their cherished alma mater.

Those who desire any special information about rates for the numerous side trips offered can expedite matters by addressing their inquiries directly to H. L. Purdy, Passenger Agent, Wabash Railroad, 68 West Adams street, Chicago.

Members are again reminded that the rates offered are much lower than those granted on the certificate plan. For the benefit of those who may not have read the previous announcements we quote herewith the round-trip rate from the principal points west and northwest:

Chicago	$14.60	St. Paul	$30.60
Milwaukee	18.00	Denver	54.60
Minneapolis	30.60	Beloit	18.15
Madison	19.80	Racine	17.10
Janesville	18.25	Dubuque	22.00
Rockford	18.00	Cedar Rapids	23.70
Des Moines	25.10	Kansas City	29.60
Omaha	29.60	Davenport	21.60
St. Louis	21.40		

The Advantages of a Typewriter

Did you ever receive a letter and have to puzzle your brain over some certain word or phrase made indistinct by the poor penmanship? And did you not exclaim, "Oh I wish that fellow had a typewriter"?

Such experiences as these are numerous, but becoming less so, as the business world is coming to realize that comparatively little attention is paid to poor penmanship and that full attention given to the typewritten letter that can be easily read.

This, however, is but one of the many advantages of owning and operating a typewriter. Any one with a little practice can write on a typewriter faster than with a pen and at the same time have a carbon copy of his letter.

Some business houses that are not disposed to be on the square, will adjust claims and losses much quicker if they know the one with whom the adjustment is made has a copy of all the correspondence that has passed between them. We know of one party who saved

enough to pay for a typewriter many times over by being able to show a firm a copy of an order he had sent to them.

Did you ever stop to think that one of the most important and intricate parts of our business life require its operators to furnish and use a typewriter. We refer to the telegraph operators. A telegram is so arranged that every single word has an important bearing on the message. In order, therefore, that messages may be as clear as possible and no mistakes madeon account of poor penmanship, a typewritten message is required of the operator.

The proper interpretation and understanding of any message or order is the receiver's benefit of typewritten letters, while the ease of writing, the rapidity and the keeping of copies of all correspondence and orders is the sender's advantage.

The Toronto Meeting of the A. V. M. A.

The Local Committee of the A. V. M. A. are having a busy time of it just now in getting ready for the coming meeting of the Association, August 22 to 25, and while all of the details are not yet completed, sufficient has been accomplished to warrant a report of progress.

The Auditorium of the Convocation Hall at the University of Toronto, which has been selected for the meeting, has been eulogized by each and every visitor who has seen it as being an ideal place for our meeting, not only on account of the excellent acoustic properties of the room itself, but the arrangement of the horse-shoe amphitheatre with its redwood opera chairs and classical decorations make it comfortable and restful, especially as it is of sufficient distance from street-car noises to prevent any annoyance from that source. It has a seating capacity of eighteen hundred and is modern and convenient in every respect.

In the adjoining building, known as the Physics Building, are two large lecture rooms fitted with projectoscopes and other appliances for illustrative purposes. Both of these rooms are also arranged on the raised horse-shoe-amphitheatre plan and are up to date in various respects. They have a seating capacity of three hundred and five hundred respectively. A most attractive feature of this building is its location, situated as it is in the centre of a large city within half a minute's walk of excellent street-car service, yet, like Convocation Hall, it is far enough from the main thoroughfares to prevent the slightest annoyance from passing traffic or street noises of any kind.

Convocation Hall, is circular in outline and is surrounded by a wide foyer jutting out from which are several alcoves that always serve a useful purpose on occasions of this kind. The upper galleries of the amphitheatre have also jutting from them quite large alcoves with seating capacity of from fifty to one hundred and fifty if necessary. These may be used for committee rooms or impromptu meetings of any kind.

It is now the intention of the Local Committee to use the foyer of the hall for the display of exhibits in the shape of veterinary instruments, veterinary books, veterinary medicines and such articles as are intended for the comfort and care of the lower animals and the convenience of the veterinarian. The demand for exhibitor's space in the radius of the foyer indicates that the exhibits will be a truly educational as well as a pleasing feature of our meeting, and the space will be so conveniently arranged that a full view of everything may be obtained at a glance. This exhibition is under the management of Mr. H. J. P. Good, whose lengthy experience with Liberal Arts Exhibits of various kinds assures success in every respect.

The Local Committee has recently been represented by request at some most important meetings of other organizations notably the Entertainment Committee of the City Council, where it was decided by resolution to extend to our Association an invitation to a moonlight excursion on Wednesday evening, August 23, to be held on one of the large elegant steamers of the Marine Service of Lake Ontario. This delightful excursion is to be accompanied with music, dancing, and other social features.

The other meeting was that of the Eastern Passenger Association, where full explanation was made as to the magnitude and importance of the anticipated gathering of the A. V. M. A., and the writer has just been informed that most liberal concessions have been made with regard to reduced fares on the certificate plan.

Arrangements are in progress relative to the holding of a banquet on Thursday evening, August 24. The Committee that is in charge of the entertainment for ladies are making progress towards excursions around the city, and other enjoyments. The Committee that is looking after the local transportation is in conference with the street car company and lake marine companies for extra accommodation which will be needed on their lines. The marine companies promise most liberal terms for scenic excursions in every direction. The Committee on hotel accommodation is preparing a diagram relative to the situation of the various houses together with their prices and capacity. This will be sent to each member of the Association in good time to enable him to make his arrangements before coming to the city, if he so desires.

The Mayor of the city, the Minister of Agriculture of the Province of Ontario, and other distinguished gentlemen have accepted invitations to address our gathering at appropriate times. The literary part of the program is still in the hands of the heads of the various committees who have that work in charge and will be fully published by the Local Committee as soon as it comes into their possession.

Everything seems to point to this as one of the largest, if not the largest, gathering in the history of the organization, and a strenuous effort is being made to have it the most valuable one from an educational viewpoint.

Pointed Opinions on Live Topics

BY READERS OF

Veterinary Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Schistocormus Reflexus

This monstrosity was born April 15, 1911, and came without aid, though the cow had a bad time of it and eventually died of injuries caused by the bony part of the fetus.

According to Dr. Williams ("Veterinary Obstetrics," page 744), I would call this schistocormus reflexus. The photograph shows the best view possible, and there can be seen the lungs, heart, and all the abdominal viscera. The hair, head, one front leg and one hind leg were all on the inside. As can be seen, there was one front and one hind leg protruding through an opening in the abdominal wall, about where the umbilicus should be. The most reflexed portion of the spine was in the region of the thorax.

I wanted to save the skeleton of the monstrosity, and told the owner to bury it, but he threw it out to the buzzards, and when I went to look for it, it was gone.

L. J. HERRING, D. V. S.
Wilson, N. C.

A Case of Ascites

The dog shown in the cut is a two-year-old fox terrier. On Jan. 19, 1911, I tapped this dog, which the owner said was constipated, and got out of him one gallon of a straw-colored fluid. I put him under the treatment recently recommended for ascites in VETERINARY MEDICINE. On Jan. 21 I tapped him again, getting another gallon of fluid, and continued the same treatment. On the 25th, I tapped him again, and on the 30th I withdrew another gallon from him. I discontinued the above treatment and changed to fluid extract of digitalis, two drops three times daily, and three grains of iodalbin three times daily, let him have no water and gave him good nourishing food. On Feb. 3 I tapped him again, and the 10th I had to tap him for the last time. He began to get better and bright-

er, and the fluid that had started to collect after the last tapping was absorbed, and he now looks better and healthier than he has for a long time.

This was a well trained dog, and the owners thought so much of him that they let him eat candies, cakes and meats in large quantities. They own a store, and this dog was permitted to

eat anything that could be had in a grocery store, and this high living caused derangement of the liver, and the consequence was ascites. A. F. KRUMLEY.

A Case of Hydrocephalus

The illustration shows the head of a colt which I delivered not long ago. For the extreme amount of fluid in the cranial cavity I think this case is seldom equaled. The mare made a good recovery.

THOMPSON GAMBEL.

Another Hydrocephalus

The head shown herewith is thirty-six inches in circumference and weighed fifty-one pounds.

I delivered this colt without extraordinary difficulty and the mare made an uneventful recovery.

W. E. STONE.

Tetanus Cured by Antitetanic Serum

I was called to see a fine driving horse that had a slight abrasion of the skin on the outside of the foot, just about the hoof, resembling a calk wound. It had been made two or three days before I saw it, and the horse was slightly lame.

Under antiseptic treatment the wound promptly healed and the lameness disappeared.

Sixteen days later I was again called to see this horse and found it suffering from an advanced case of tetanus of a very severe type.

The animal was a valuable one and the owner wished to spare no expense to save him. I at once administered two ounces of Barbadoes aloes, two ounces alcohol and two drams belladonna in a pint of oil. Owing to the difficulty the animal had in swallowing I presume I did not get more than one-half of this mixture down him. I then placed him in a darkened box stall and allowed no one to disturb him, and began giving antitetanic serum. I used 4,500 units the first day, 6,000 units the second day, and the third, fourth and fifth day 3,000 units each. Then 1,500 units daily until 30,000 units of antitetanic serum had been given.

After the third day there was some improvement. The animal was able to drink a small amount of thin gruel. The seventh day he was able to eat grain and a little hay.

No other medication was given, and recovery was complete.

I believe there are few cases of tetanus that will not recover if serum is used in sufficient quantities.

C. N. SMITH, V. S.

Otsego, Mich.

Azoturia: Tetanus

Commenting on your notes on azoturia given in the June issue of VETERINARY MEDICINE, I wish to say that I do not think myself any smarter than my brother practitioners, but I can truthfully say that my cases of azoturia are most simple.

During the past five years I have lost only two cases of azoturia and during the past year I have had five cases of azoturia in mares in foal. Two of them lost their colts and made a rapid recovery. The others were much slower in recovering, but are all O. K. at present.

I have just treated my third case of well-developed tetanus from nail pricks by the use of Abbott's poly-bacterins. All three of these cases have made excellent recovery and are now at work. I did not use any treatment other than the bacterins and occasional laxatives. I think there must be something in the poly-bacterin treatment for tetanus and I am going to keep on using this treatment and will report my results later whether they are successful or not.

F. E. HUMPHREYS.

North English, Ia.

The Hypodermic Needle

Next to the accurate fittings of the hypodermic syringe, a good sharp-pointed hypodermic needle is necessary to make a clean, quick and painless injection.

All the great medical and surgical supply houses are doing their best to supply the veterinarian with perfect hypodermic syringes, but they do not supply the right gauge of the different needles which go with the hypodermic outfit. It is the small needles that we want. These needles are supplied at present in a gauge too large. The average horse, cow, mule or donkey skin can be perforated easily by a needle of a gauge between sixteen and twenty. Any needle of that gauge and if not longer than one to one and one-half inches will allow, when sharp and clean, of a quick, painless perforation of the skin. The patient will feel nothing and the doctor can inject with care the dissolved tablets. But with a hypodermic needle of a gauge of ten to fourteen it is a different matter.

Last September I bought an excellent hypodermic outfit of The Abbott Alkaloidal Company. Everything was first class except the needles. Well, I got them changed, but I was told by the house that eastern practitioners were using only that large kind. Three weeks ago I bought a hypodermic outfit from Parke, Davis and Company. When I took it out for business I found to my great disappointment that this careful firm had made the same mistake that The Abbott Alkaloidal Company made. The only difference being that Parke, Davis and Company have enlarged the gauge a good deal more than did The Abbott Alkaloidal Company. I am not by any means a kicker, but I think it only right that some one who has experience in practice with the hypodermic syringe, should call the attention of the profession to these errors, because I know well enough what lot of trouble a patient can give us, when we are trying to give him a hypodermic injection.

It may be that the manufacturers don't know how much depends upon an easy perforation of the skin. It may be also that they think we use a knife before we insert the needle. I am sure that every practitioner who has been in the harness for more than ten years will agree that the needles we use most are often far too large. As I said before, any hypodermic needle with a gauge of eighteen to twenty-two is strong enough to perforate the skin of any horse or cow, if used in the right location.

Yesterday, I had to give a hypodermic injection to a six-year-old stallion that had a case of distemper. When I opened my hypodermic case the owner, an old client of mine, admired it, for it is indeed a very fine hypodermic syringe, but when he saw the needle he said, "My God, Doc, you ain't going to use that little piece of a sewerpipe on Teddy! If you like to risk a kick, all right, but I don't stand for the damages you may receive. In fact, I'll not blame Teddy if

he kills you." Well, Teddy did not kick, because I used a different needle.

I think that a goodly number of my fellow practitioners have purchased the same kind of an excellent hypodermic outfit, and I want every one of them to write to VETERINARY MEDICINE and protest against the size of the needles; that not alone the two firms mentioned but that all instrument supply houses may stop supplying such enormous hypodermic needles. We have few opportunities to give hypodermic injections to elephants, hippopotami or rhinoceros. Why should we be compelled to buy hypodermic needles suitable for use only on such animals?

C. P. v. STOLBERG.

Oceanside, Cal.

Food and Water in Diagnosis and Treatment

In my locality I attribute one half of all the digestive disorders in horses to improper feeding and watering. Many times before I had been in the presence of my patient five minutes have I had the attendant or owner ask the old question, "Well, Doc, what is the matter with him?" Time after time have I been tempted to give a favorable prognosis, as the main symptoms of the disease revealed themselves so plainly, and yet at the end of an hour, by careful examination and research into the character, manner and mode of feeding, have I foretold the animal's death.

Often we meet with attendants or owners who are prone to give us other than the actual facts regarding the food and water administered. These answers, I find, are not to conceal anything, but simply to avoid an unfavorable prognosis by the veterinarian. In such cases we must use tact and judgment while gaining our ends. I have often given some simple, harmless medicine, and then start in to draw my client out, gaining unbeknown to him knowledge of his mode of feeding and treatment of stock.

The time and manner of harvesting, curing and keeping feed, and the way it is fed, if studied, will help us in our diagnosis and treatment a great many times.

For example take two brothers, both clients of mine, who live some miles apart. A— is a careful feeder, first watering his stock on coming from the field, then allowing them to eat hay for half an hour before giving the oats. B— is just the opposite; he doesn't believe in giving water, if the horses come in warm, but waits until ready to go to work again, and is one of those "any-old-time-and-place" feeders.

While at the farm of A— one day I missed a fine, large mare. I inquired for her, and was told she had that day been loaned to the brother to use during seeding. Two days later I got a call from B— to come at once. Being in Spokane, 80 miles distant, my assistant called me on the 'phone telling me it was the borrowed horse that was sick. I told him to go at once, foretelling the con-

ditions he would find, and advising him in regard to the treatment. I went on my way, confident that on my return I would find the horse well, and I did, because I knew the kind of feed and manner of feeding she was used to, and the kind she was now getting.

We must study those with whom we come in contact. Whether we discuss this question of food with the farmer at the side of our patient or in passing through the fields, you will find him a careful listener.

RALPH ELLIS.

Odessa, Wash.

Immunizing and Curative Effects of Bacterins

I will cite an instance where I am positive that the poly-bacterin treatment saved the lives of thirty valuable colts.

November 2, 1910, Mr. L. E. Brown called me to Maple Lawn Farm, the home of "Trampfast" and "The Exponent," to attend to about thirty colts (weanlings), all in advanced stages of diphtheritic influenza. Prior to calling me, Mr. Brown had lost seventeen head, frequently burying two in one grave. All of this happened with a veterinarian in constant attendance.

I immediately placed all the sick colts on fluid extract echinacea every two hours, guaiacol and lanolin externally on throats, and potassium bichromate and tincture of ferric chloride with proper diluants every four hours. I sprayed the mucous surfaces with adrenalin chloride 1 : 1000 to reduce the edema, poulticed the throats, but all to no purpose. It was no unusual thing to have to perform tracheotomy with only a moment's notice in order to prevent death from suffocation; in fact, I did everything I knew of to bring about a favorable termination of the disease.

After several days of unsatisfactory effort, I advised Mr. Brown of the poly-bacterin treatment, and his reply was to spare no effort or expense. I immediately sent for Poly-Bacterins and received the same in less than twenty-four hours.

The poly-bacterin treatment was commenced on Nov. 14. I gave one-half an ampule to each colt critically ill, except one very lusty fellow; he received one ampule. I discontinued all other treatment except nourishing and stimulating gruels.

I gave a second injection to each patient four days later, one ampule to each one this time, and in only one instance did the dose seem excessive. In every case, within four days, every colt showed a marked improvement, all were breathing easily, all abscesses discharging less, and every colt was eating. Convalescence was uneventful and recovery complete in about twenty days without a thick-winded one in the lot.

During this time, every colt that had not had the disease, on showing the first symptoms, was given a full ampule of poly-bacterins (Abbott), and in no instance did the disease develop.

These colts had all received during July an immunizing dose

of Mulford's serum and another in October, and there was no time during the interval from July until December that the place was free from the disease.

During the time I treated the colts there were no fatalities, but I am satisfied there would have been several but for the employment of the poly-bacterin treatment.

I believe the site of injection is immaterial, as many of these colts were suffering so acutely in their efforts to breathe that I gave the injection in the most available spot so the colt could be soonest released. All injections were made subcutaneously.

I have used poly-bacterins in several cases of septic arthritis with very gratifying results, and really believe this treatment specific in such conditions.

HARRY H. GUY, V. S.

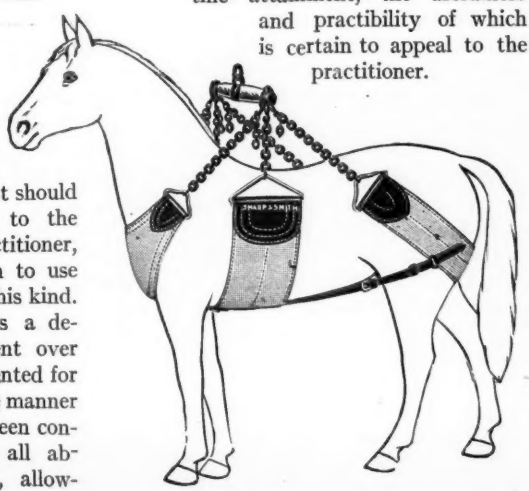
Delavan, Ill.

A New Sling

Our readers' attention is called to a very recent invention in horse slings that should prove of value to the veterinary practitioner, who has occasion to use an appliance of this kind. The apparatus is a decided improvement over anything yet invented for this purpose. The manner in which it has been constructed relieves all abdominal pressure, allowing no impediment to circulation or peristalsis.

Animals suffering from diseases where dyspnea is a marked symptom are not additionally embarrassed, and mares in advanced pregnancy are suspended without any undue inconvenience. One remarkable point is that the apparatus can be adjusted to horses of any size, and is strong enough to support the heaviest patient.

A triangular piece of canvas runs forward between the anterior limbs, then divides, each end terminating in a chain attached to a single-tree, suspended from the roof, allowing approximately two-thirds of the body's weight to rest comfortably, yet securely. To further equalize the weight of the body, the breeching posteriorly is set low, allowing perfect rest when the patient brings tension on it, the whole being a demonstration of forethought and scientific attainment, the usefulness and practibility of which is certain to appeal to the practitioner.



Convention of Nation's Horsemen

Announcement has just been made of the fact that the second annual convention of horsemen will be held in Pleasant Hill, Ohio, August 8 to 12, under the auspices of Prof. Jesse Beery, the successful trainer and breaker of horseflesh.

An elaborate program has been shaped up by Prof. Beery and invitations have been extended to the thousands of disciples of Prof. Beery's horsemanship methods—many of whom attended the notable occasion last summer.

At that time there was an attendance of several hundred students, and this year it is considered certain that the attendance will be doubled and probably trebled.

The majority of the students have been invited to bring their steeds and they will compete for a long string of prizes that have been hung up for the various events on the program. There are to be a number of money prizes as well as prizes of equipment. Professor Beery's performances will be the feature events of the convention.

The Professor is endeavoring to purchase two of the half dozen man-killing stallions in this country. If his plan is successful he will endeavor to conquer the animals during convention week.

Unusual Case of Ascites

May 14th I received a "hurry-up" call to see a cow that was badly bloated. I found her with a temperature of 99° F., and the pulse about normal. The respirations were labored and somewhat accelerated. The abdomen was greatly distended, but obviously not with gas. I diagnosed the case to be one of ascites and inserted a trocar and drew away fifty-three gallons and three quarts of serum by actual measurements. The trocar had been inserted a few minutes before I secured means of measuring the fluid, and I believe that all told fifty-five gallons were withdrawn from the abdomen.

I would not think of writing this article if I did not have a witness to prove the authenticity of the above statement.

This is very much the largest quantity of serum I have ever seen taken from a single abdomen and I would like to know if any one else has seen a similar or a greater quantity under these conditions.

J. L. GILLETT.

Barnard, Mo.

Overheated or "Baked" Horses

What is the pathology, symptoms and treatment of the condition known as "overheated"?

When a horse does not perspire freely or to any appreciable extent what is usually the cause and what line of treatment is best?

In my practice I have frequently been called upon to treat cases which present a slight swelling on the ventral portion of the body posterior to the forelegs and which is usually devoid of hair and more or less sore. Small lesions of a similar description, about the size of a pea or smaller

are found on any part of the body. This condition is often found in young horses in early summer.

I usually treat this with laxatives, nux vomica and Fowler's solution with fair success, but shall be pleased to have others give their treatment, also their diagnosis. This condition often recurs the following spring.

D. O. S.

——, Ohio.

A Peculiar Antemortem Clot

I was called about 9:30 one morning to see an eight-year-old, 1,200-pound black gelding that was in fine condition and used as a hearse horse. He had been used at two funerals the preceding day and nothing wrong was noticed when he was put into a box stall at night. I found him scarcely able to extend the left front leg. The left elbow was three and one-half inches lower than the right one and I diagnosed the case as one of radial paralysis.

I saw this horse about seven o'clock in the evening of the same day, and he was lying down on his left side. I had him turned over and he was able to get up, but kept his right foot extended much the same as a horse with laminitis. I examined the digital arteries for evidence of inflammation of the foot, but found no pulsation at all. I then examined the left digital and found no pulse.

This horse was having quite a nervous tremor in the anterior extremities and was unable to stand more than a minute at a time; his temperature was 101.5° F., respiration twenty-four; pulse forty-eight and full. I left some gelseminine to be given him if he became restless, and also told the owner to turn him over every three hours. He died without a struggle at 5:30 the next morning.

AUTOPSY: Abdominal viscera were normal and the lungs dark colored. There was no evidence of contusion or fracture. Both brachial arteries were occluded, and there was a clot in the heart as large as a turkey-egg.

The peculiar thing about this case is its short duration. I have held post-mortem examinations on several horses in which there were large antemortem clots but the history was quite different from this one and I never before saw double or single paralysis produced by it.

CHAS. R. TREADWAY, D. V. S.
Kansas City, Mo.

Arsenic for Warts

Referring to "A Warty Case," described and illustrated on page 538 of the April issue of VETERINARY MEDICINE, I will suggest a treatment to Dr. Moeller that has proven effective with me in many cases fully as bad as the one shown in the cuts.

The treatment is nothing more or less than one ounce of Fowler's solution in the drinking water twice daily. After about two weeks of this treatment the warts become very dry and drop off never to return.

Hereford cattle are much more susceptible to these warts in my locality than are cattle of any

other breed, and I have treated a number of them fully as bad as the animal shown in the illustration.

JAMES SMELLIE, M. D. C.
Eureka, Ill.

To Stop Unlicensed Practitioners

On page 540 of the April issue of VETERINARY MEDICINE the question is asked: "What are the proper steps to stop empirics from advertising as graduates?" In some states, of course, there are laws to prosecute them and one would have to file a complaint with the county attorney in the county in which they practise.

Here in Nebraska we have a law that a man who is not a graduate cannot use the word "veterinary" or advertise as such. Outside of that it does not prevent these unlicensed men from practising. The most effectual way to handle these fellows would be to advertise them in the local papers and especially in these little country papers, where they get out among the farmers. If the State Board of Veterinary Examiners were to insert a notice to the effect that: "So-and-So is not a veterinary surgeon and is not entitled to practice as such in the State," in the local papers, and the insertion kept in for a length of time, it would very soon put these fellows out of business.

These fellows get out among the farmers and with a display of instruments (especially dental) and nerve they lead the people for the time being to believe that they are all right. If the State Board has no funds for this purpose the veterinarians in whose territory these fellows practice could well afford to pay for the advertisement.

A. T. EVERETT.
South Omaha, Nebr.

Some Useful Prescriptions

The following prescriptions were sent in response to the query concerning the treatment of warts in cattle, but in some way the name of the writer was lost.

FOR BODY WARTS

℞ Creta ppt. .....oz. 2
Gum acacia .....oz. 1
Glycerine .....dr. 1
Aqua .....pt. 1

Mix and make lotion.

Apply every day and when dry take a piece of solid chalk and rub the parts smooth until removed. In about sixteen days you may expect a radical cure.

TEAT OINTMENT

℞ Boracic acid .....dr. 2
Camphor gum ....oz. ½
Lard .....oz. 3

Mix and make an ointment according to the art.

Apply after milking.

An Australian Encampment

The following clipping is taken from an account of a military encampment published in *The Register*, Adelaide, South Australia.

The Major Desmond referred to is Dr. J. Desmond, Chief Government Veterinarian at Adelaide.

Over 600 horses required the attention of the P. V. O., Major Desmond, and Capt. Loxton, but they admitted that they found it difficult to keep busy. The

officers were always on the spot, and the animals that did need treatment got it promptly. Any injuries, however, were of a superficial character, and a serious illness never happened. There were actually no sick lines. Major Desmond remarked that the camp was the cleanest he could remember, and that the troopers had shown marked consideration for their mounts.

Peculiar Stomach Rupture

I wish to learn more of two cases that I have come across in the past four months. Perhaps some readers of VETERINARY MEDICINE can enlighten me. I shall be grateful if they will do so.

The symptoms in both cases were the same; the animal was feeling well, working steadily; had a good appetite; was fed on hay and oats and corn up until about two days before death. He then refused all water and food and symptoms of colic were observed. The bowels were loose and manure passed regularly; vomition was present; the pulse was almost imperceptible and the horse lay down a part of the time. The pains were not severe until the last stage, when the horse was sweating and fell over dead.

The autopsy revealed a slight inflammation of the bowels and numerous petechiæ on the serous coat. A rupture of the stomach was present but the most peculiar condition was the diseased stomach. It was decomposed and resembled a lace curtain and when held up to the light only a net work of blood vessels and a few hanging shreds could be seen. What was the cause? C. L. W.

——, Illinois.

Parturient Paresis

I am interested in a report published in a recent issue of your Journal describing a "Peculiar Case of Parturient Paresis." In my practice I have met with cases just as described in the report of the doctor from Hampton, Iowa. In my opinion these cases are either the first stages of parturient paralysis or just an exhaustive paralytic state from calving and a general disturbance of the digestion.

I find the animal will always continue to eat if there is any food within reach. They usually appear bright in the eyes and retain their full senses excepting the inability to handle one hind quarter or to rise to the standing position.

My treatment consists in giving the animal a drench: magnesium sulphate, one pound, and water, one pint.

The udder should always be stripped out thoroughly four or five times during the day and be rubbed thoroughly three or four times daily with hot petrolatum. I have had just as good recoveries without inflating the udder in these cases as I have with the air treatment, but in all cases where the animal is completely paralyzed, I use the inflation of the udder in conjunction with the drench.

J. A. ROYCE, M. D. C.
Lincoln, Nebr.

The Veterinarian

In former years and even yet it is not uncommon to hear much good-natured scoffing at the horse doctor and his work, but the man who does so does not

know what he is saying. Many of these men are able men who are doing scientific work that puts to shame many of our much boasted members. These men are making and using their own make of vaccines, and are curing the old cases of "poll-evil" and other kindred diseases that a few years ago were considered incurable.

Are we of the medical profession doing as much? Do you treat your cases of carbuncle by these remedies? What are you doing for the deep seated abscesses that you are unable to reach by surgical means? It is not unlikely you could learn a thing or two from your veterinary. These young men are live wires that are good to communicate with, for almost all the old fossils of their profession are dead or shelved. In this they have the advantage of we of the medical profession, for we keep on manufacturing fossils, and allowing them to prey.

The above clipping, taken from the *Washington County Medical Journal*, is very gratifying to me, and no doubt to all other veterinarians. Most men locating in smaller towns have had considerable "hoss doctor" spirit, quackery and prejudice to overcome. Their predecessors often were drunkards and loafers and consequently our whole profession was regarded with suspicion. I am glad to say that in this locality this feeling has largely disappeared and has been replaced by a feeling of respect, and the confidence of the better class of people.

This great change has been due to several causes. The men locating here of late years have been men of better education and stronger personality than formerly. They have been able to talk intelligently with physicians and consequently are frequently members of the medical societies, and command the respect of the members for our veterinary profession a matter of considerable importance.

I personally know of several instances of veterinarians coming to town perfect strangers and who are now very active not only in this profession, but also politically and socially.

Personally this is intensely gratifying to me because I think we are all able to do better work when we feel that our profession in general and we personally have the respect and esteem of the public.

I think that we cannot afford to be careless about our actions. We often make an impression on men in ways or at times of which we think little. To illustrate this: a short time ago while working on a bad obstetrical case one of the men who was assisting—an illiterate hired hand—remarked "they certainly have better veterinarians in Pennsylvania than in the west." Upon questioning the man I found that his opinion was formed from seeing a veterinarian who was too rough with his case and as he expressed it "was always cussing." Of course we all know that the veterinarians of the west are just as competent as those of the east, and yet some man had, as expressed by this man's opinion, hurt the reputation of his western professional brethren to a large extent by his actions.

I often hear my clients tell "a good one" on a veterinarian in another state. Usually it is something which he might have done, thinking that his client or the observers would never notice or were too ignorant to notice. I claim that we cannot be too careful in our speech and actions. We must think not only of ourselves

but remember that the reputation of our chosen profession is at stake and that we all have our own influence with the judging public.

I would particularly urge men locating in a new place, or young veterinarians just starting, to set a high standard for themselves. I believe that too many of us underestimate ourselves. We ought to consider ourselves equal in every respect to any other professional man in town and conduct ourselves accordingly. Let our equipment be respectable and professional; our carriages, horses, etc., be neat and presentable rather than shabby and slovenly. Let us have our offices in some good, respectable business block or some similar place, never in a livery stable surrounded by flunkies and stablemen. The sooner we get rid of everything "hossey" the sooner will we be forgotten as "hoss doctors" and the sooner will we be recognized as veterinarians and men with a medical education.

I am only a young practitioner myself, but I can see that many men who have been practising longer than I, have gotten into a rut and have a tendency to forget this phase of our work.

Let us remember that we all are morally bound to advance the standing of our profession just as much as we are to relieve suffering.

EDW. A. CAHILL, V. M. D.
Canonsburg, Pa.

THE loss from disease of hogs in the United States during the past year, 43.5 per 1,000, is the smallest ever recorded by the Bureau of Statistics. Reports received year by year indicate that losses due to epizootics of hog cholera are gradually decreasing.—*The Breeder's Gazette.*

Tetanus in An Army Mule

During the last six weeks of my U. S. Army service in the Philippines I was temporarily stationed at Malabang, situated at the south end of the Overton-Malabang trail which reaches into the Lanao country where the bad Moros hold forth. This post includes two troops, Second Cavalry, Second Company, Third Infantry and about two hundred quartermaster animals. The best mules are doing trail work, six being used on a wagon, with three relays, to Camp Vicars, twenty-five miles away, and at an altitude of 1,700 feet. From Vicars to Camp Kiethley the trail is continued by launch across Lake Lanao, thirty miles, and thence to Overton by trail, seventeen miles.

On January 26, 1911, one of these beautiful trail mules was brought to the hospital, with the information that he "didn't just act right." My diagnosis was tetanus and of course I kept him in the hospital.

Subject: Dark bay male mule, Hoof No. 92, weight about 1,100 pounds, age 8 years.

January 26, 8 a. m., mule entered hospital with tetanus symptoms not well marked, the jaws opened two inches. An 8-dram physic ball was immediately given with difficulty, also two subcutaneous injections in chest, of

phenol one dram, glycerine one ounce, aqua dist. one ounce; one in the forenoon and one in the evening.

January 27: Slightly worse. Phenol treatment caused swelling in chest. Stall darkened and kept free from flies, by continual cleaning of floor and scattering creolin. In the evening, swelling in chest was still increasing, so no more phenol was given.

January 28: Symptoms well marked, more noticeable in tail and hind legs and neck. Chest still swelling, appetite good. Mule nickers on the approach of a man.

January 29: No change except accelerated breathing. About one pint of ground alfalfa meal mixed with oats and wetted, was given twice daily for its laxative effect on bowels, as physic ball did not work, but the bowels, however, were working nicely.

January 30: Not much change; swelling in the chest enormous, extending down to knees and below the brisket or belly. The patient was possibly a little stiffer and breathing was becoming hurried.

January 31: About the same. The appetite was still good, the jaws were open one and one-half inches. He liked the alfalfa meal so it was increased to one-half meal, one-half oats (dampened). Chest swelling was still enormous. Here I decided to inject phenol direct into circulation so injected phenol, one dram, glycerine, one ounce, water, one ounce, into the jugular of a horse that did not amount to much. Experiment worked O. K., no bad results.

February 1: Patient was very much worse, extremely nervous, breathing and pulse accelerated. Injected phenol, one dram, glycerine, one ounce and water, one ounce, directly into jugular. The bowels were working nicely, flank breathing predominated, marked regurgitation into the jugulars, appetite good, jaws open about one and one-half inches.

February 2: Showed slight improvement. Appetite good, bowels working nicely, breathing ninety, pulse wiry, fifty, temperature 101° F., jugulars sluggish. Injected another dose of phenol into jugular. Swelling of the chest now included both knees and at chest was hard and doughy. Owing to the extreme difficulty of tapping the jugular with the poor U. S. Government syringe I had to work with, and the nervous condition of patient, I believe I did him more harm than good by the intravenous injections and caused him a good deal of pain and excitement. If I had my own one-half-ounce syringe, which was packed at Zamboanga, I would have had no difficulty whatever. Why does not the government give us up-to-date instruments and drugs?

February 3: Slight improvement. Pulse forty, hard and wiry. Breathing seventy-five, temperature 100.3° F. Tail and neck not so rigid. Not quite so nervous, appetite and bowels normal. Chest swelling still large and hard, front legs badly stocked. No medicine given. Prognosis favorable.

February 4: Apparently the same as the preceding day.

February 5: Slight change for the worse. Temperature 100, pulse 45, breathing 80, appetite impaired, bowels normal. Swelling in chest going down, swelling at jugular going down.

February 6: Seven a. m. Slight change for the worse. Temperature 101° F., pulse and breathing same as the day before. Perspiring slightly, but symptoms are not aggravated. Prognosis unfavorable.

Eleven a. m.: Jaws were locked. Puffing like a steam engine, perspiring quite freely, pain intense, the spasms of acute tetanus now had patient in their grip. These spasms came on without any warning whatever and increased in severity until death relieved the patient at 12:30 noon.

From past experiences I feel sure that tetanus antitoxin in large quantities would have saved this mule, but our dear old Uncle Sam has so many incompetents working for him who know too much (a little knowledge is dangerous) and they will not listen to the pleas of veterinarians for up-to-date drugs, antitoxins, etc.

On arrival at the hospital this mule's shoes were removed and examination for nail punctures was conducted in vain and no scars were visible anywhere.

J. R. SHAND, M. D. C.

Perth, Australia.

Laryngitis in the Horse

Definition. Laryngitis is an inflammation of the mucous lining of the larynx. Theoretically it may be limited to the larynx, but in practice we find that it involves the pharynx also. This condition is defined as laryngo-pharyngitis and is the one we are generally called upon to treat. It is spoken of by the laity as "sore throat."

Etiology. The cause of laryngitis is in most instances due to exposure during a cold rain; subjection to cold drafts when heated or to sudden changes of temperature. The disease sometimes appears as an epizootic. This form generally appears late in the fall or early winter and is probably due to specific organisms aided by atmospheric influences. Traumatic and chemical agencies which irritate the mucous membrane of the larynx are occasional sources of the trouble. Among such agencies may be mentioned balling with a sharpened stick or the administration of irritant medicines not properly diluted.

Pathology. In laryngitis the inflammation runs a regular typical course; beginning with the dry, hot stage and suspension of the secretion of mucus; then the second stage with an abundant effusion producing an edema of the parts. Occasionally the inflammation progresses to the third stage and suppuration results. Sometimes there is (in severe cases) a local necrosis in the larynx and the horse will cough out shreds of necrotic mucous membrane. This complication is termed necrotic laryngitis. It is usually fatal.

If the edema is severe in the second stage it will diminish the size of the air passages and cause more or less dyspnea and unless promptly remedied will produce edema glottidis, with asphyxiation. Death from edema glottidis usually occurs

during the first two or three days of the attack—later it is not so liable to occur.

Symptoms. Almost all cases of laryngitis commence with a chill though ofttimes it is not observed by the owner. The pulse is full and round but soft and increased in frequency; the throat is more or less drawn and painful on pressure; the nose is poked out. When the animal attempts to drink, the water (or a part of it) returns through the posterior nares into the nasal chambers and out through the nostrils. There is a temperature of 104° F. to 105° F. A cough is usually present which changes in character as the disease progresses being at first dry and hoarse and later moist; pressure of the larynx causes coughing as does an attempt to eat or drink; the tongue is generally furred, sticky and hot; all the visible mucous membranes are reddened (congested) and occasionally there is an abundant epiphera. In fatal cases the extremities get cold, the Schneiderian membrane becomes a livid hue, the eyes bulge and weakness rapidly ensues, but the animal persistently stands until he drops over dead.

Prognosis. The prognosis of laryngitis should be guarded. Laryngo-pharyngitis with edema glottidis is quite dangerous and frequently fatal and as this complication is prone to arise quite rapidly one should be careful in making a prognosis.

Treatment. In the commencement of an attack aconitine and bryonin in small and frequently repeated doses is indicated and generally gives good results. In the second stage, guaiacol has proved of value. Guaiacol is not only efficient in edema glottidis occurring during an attack of laryngitis, but it seems to prevent that undesirable sequela from arising. I generally apply an ammoniacal liniment to the throat though I doubt if it is of much value. Aconitine is not indicated after the first stage and should not be continued too long. The bryonin though, should be continued until the patient shows improvement. The following prescription has proved of value in some cases during the second stage.

Heroin, one-half grain ammonium chloride, chloroform, glycerine, syrup of milk cherry and syrup of tolu, aa q. s. M. Sig. At one dose, repeat every three or four hours.

The inhalation of medicated steam, i. e., creosote, eucalyptus or turpentine has not proven of value in my hands. If dyspnea is marked and the case is not close by, it is well to perform tracheotomy and take no chances. The bowels should be watched and if necessary give enemata of sodium sulphate or linseed oil. The animal should have good fresh water before it at frequent intervals and it sometimes proves of benefit to dissolve small doses of potassium nitrate in the animal's drink. In this or all other diseases good nursing proves of benefit.

R. F. REEDS, V. S.

Bacterin and Serum for Tetanus

I was called April 4, 1911 and found a mule in a very bad shape. The owner told me that about a

year ago he had laryngitis (the mule not the man) and that a number of times since then his throat would gather and break, and discharge for about two weeks. Then apparently get all right again.

This time I found him with throat badly swollen, very stiff, scarcely able to move, muscles distended and rigid, hind legs badly swollen, very nervous and excitable, and upon raising his head the membrana nictitans covered the eyeball. I diagnosed it as tetanus. Upon questioning the owner I learned that he had picked up a nail just fourteen days previous to showing symptoms of the disease, and had been sick four days before I was called. I at once gave antitetanic serum (Pasteur) and streptococci vaccine (Sorby) and continued the same at intervals of twelve hours until I had given eight doses. I applied a thick cataplasm to throat, and gave seven drams of aloin, also gave half ounce of Fowler's solution thrice daily.

April 9th, the fifth day after I saw him he was returned to light work feeling fine only a little weak. For quick and sure results I certainly advise the use of the tetanic serum with the streptococci vaccine or rather the streptococci with tetanus for I find the majority of such cases have a mixed infection.

LOUIS GARDNER, V. S.
Sycamore, Ill.

Removal of Warts

Referring to the question by W. K. Moeller (April issue) as to treatment for warts on a cow, I had a cow in similar condition last fall and with a curved shears or scissors all warts the size of a pea or larger were clipped as close as possible, and after clipping several hundred each place was moistened with pure formaldehyde. The places all healed nicely and the warts did not reappear. A few too small to clip off at this time were clipped a month later and treated as above.

The cow is now smooth and free from warts. A few slight scars remain where some of the largest warts were clipped too close, taking the entire thickness of skin and leaving small holes in it.

J. H. DEDRICK, D. V. M.
Parker, Ind.

Automobile vs. Horse

In a recent issue of your valuable periodical I have read a statement from A. B. Ellis, D. V. M., of Los Angeles, Cal. This article strongly favors the horse as a means of conveyance for veterinarians.

I beg to differ with Dr. Ellis. The real reason is apparent to any thinking man. A veterinary case is in one respect exactly like a fire: every moment counts! A veterinarian can and does save time, with a good machine like the one I use—a 38 Overland, which I have run over 14,000 good, honest Illinois miles at an expense for repairs of only $7.75!

During this run, reaching considerably more than half the distance around our planet, I have saved many and many a valuable animal—sometimes imported sire

horses worth a bankful of cash—just by being on time. A case is many times like a fire, indeed! Every second counts and great and good animals have been rescued from death by the arrival of the veterinarian on the dot. Let him linger and loiter with heavy clogged wheels, and the imported sire would be a skin and remains. Veterinarians must keep pace with the march of improvement. I suppose there was a time when veterinarians walked or traveled in some other primitive manner, but up-to-date veterinarians of the present day go with the machine that gets there! Not only gets there, but saves thousands of dollars for owners, as I know by long experience.

J. D. DURACK.

Geneseo, Ill.

Wanted Cause of Death

Case 1.—Mare, four years old, began in fall to become unthrifty after having chronic indigestion, as shown by poor appetite, which was very irregular, sometimes eating as much as four or five ears of corn at a feed and at other times only a half ear. She would not eat much hay or fodder, and ate but very little bran. This condition existed all winter up until about February 15, and as I was on the farm doing some other work she was presented to me for treatment. I examined her teeth, which were good. Mucous membranes were all more or less pale, and she was somewhat emaciated. Pulse, respiration, bowels and kidneys seemed healthy. I informed the owner that she was probably suffering from malnutrition and that I would fix up some Fowler's solution for her, but I gave her a ball composed of aloin, three drams, calomel thirty grains, at 9 a. m. At 7 p. m. she was purging and at 4 a. m. next morning she was found dead in a pasture. There was evidence that she had just simply collapsed, sank to her knees and died without a struggle. I should like to have this published and discussed.

Case 2.—Black mare, seven years old, had both lungs so badly affected that they crepitated upon auscultation, her breast and under her chest was swollen badly with a doughy, pitting edema, her appetite was poor. I concluded that it was a neglected case of pneumonia, as the condition had obtained for some two weeks, and prescribed a pound of dry sulphate of soda in two-ounce doses on the tongue every three or four hours, and I also left a quart of Fowler's solution which had in it four ounces iodide of potash and twenty-one 1-2-grain tablets of strychnine sulphate. This was to be given on the tongue with a two-dram syringe in tablespoonful doses three times daily, one-half hour before feeding, so as to get it on an empty stomach. This was about four o'clock in the afternoon. I gave a half-dose of the solution to demonstrate and ordered another dose at bedtime. Ten minutes after the bedtime dose the mare staggered, reeled, and fell dead. What was wrong? Will anyone tell me?

J. W. HARBAUGH.

Corydon, Ind.

Intussusception

Intussusception in the dog has been a very rare occurrence in my practice since dog fanciers in my town are few.

This case was in a bird dog, about two years old. On a Tuesday morning the owner noticed that he was ailing; he cried some but not much; was dumpy and laid around all day. Thinking he was constipated the owner gave the dog two tablespoons of castor oil. The next day he was about the same, refused all food, and drank very little water, urinated quite often, but only a little at a time. He appeared to be in no misery or pain but only stupid and wanted to be left alone. This went on until the following Sunday morning, when he was brought to the hospital. The dog walked by the owner's side the distance to the hospital—two blocks and seemed to have no trouble in going.

The owner by this time had concluded his dog had been given ground glass and so reported.

The symptoms as seen on presentation at the hospital were: Back slightly arched, temperature 101° F., pulse about eighty, dull look out of the eyes, a cold clammy feel to the ears, lips and even the mouth inside were cold. The respiration was nearly normal, but that cold feeling of the body was noticeable all over. The abdomen was markedly cold. On manipulation of the walls of the abdomen he showed no signs of pain even with quite hard pressure. My prognosis was unfavorable.

I thought there was an intestinal obstruction, likely caused by some foreign body which had become so lodged that nothing could be done.

I prescribed quinine one grain, iron two grains and strychnine one-sixtieth grain every two hours.

Monday morning the dog seemed brighter and when his owner called, he got up and went to him wagging his tail and stood with apparent ease, but would neither drink water nor eat anything. During the night he had a passage from the posterior bowels which was very black with some blood in it. A couple of spoons of warm milk was given and swallowed without any trouble and apparently retained. He lay in the natural position of a dog while sleeping.

Manipulation at this time resulted as before. Apparently no pain, but a soft lump could be felt, which when pressed upon caused him to arch his back and look toward the hand. He made no outcry. When left alone went and lay down as before.

Towards night he was much weaker and showed he could not last long and died after 10 p. m.

Autopsy: Some peritonitis showed on opening the abdomen; the large intestine was bloated, this had occurred after death. Some fecal matter of a putty color was in them; the lungs were in good condition; the liver very large; the small intestines and stomach were empty.

The obstruction or intussusception took place at the beginning of the large intestine or about two inches in front of the cecum. The telescoped intestine, when

pulled out, measured twelve and one-half inches. This was held in a portion of the intestine less than six inches in length.

I was unable to satisfactorily diagnose this case, or at least I was not positive enough of my diagnosis to warrant opening up the abdomen of this dog. Literature on this particular condition in the dog is very limited.

I would like to hear from some who have a big dog practice, whether or not, the cold, clammy, dead feeling in this case is shown in all cases of telescoping of the intestine in the dog. If so it seems to me, our writers must have overlooked these symptoms, for I cannot see any mention of them in my works.

D. O. KNISELY, D.V.S.
Topeka, Kan.

Absorbine

What is the composition of Absorbine, and how is it prepared?

H. F., M. D. V., Ind.

We are unable to give you a formula for Absorbine but we believe that oil of wormwood is the active constituent.

Try the following and report results:

Oil of wormwood	1 fl. oz.
Oil of turpentine	4 fl. oz.
Oil of wintergreen (artificial)	2 fl. oz.
Oil of mustard (artificial)	1 fl. oz.
Alcohol	8 fl. oz.

—*Physicians' Drug News.*

Hoof Cement

The following cement is useful for cracked hoofs:

Gum turpentine	1 av. oz.
Gum ammoniac	3 av. oz.
Gutta percha	6 av. oz.

The first two are melted together by means of a water bath, then added to the gutta percha, previously melted, with constant agitation. If a black color is desired lampblack may be added.

When it is to be used the cement should be softened in hot water and pressed in the hoof crack, which has previously been well cleaned.

—*Physician's Drug News.*

Skin Cancers

By WILLIAM N. MACARTNEY, M. D.
Fort Covington, N. Y.

It is fully established that the cancer germ, cancer cell, cancer poison, be it what it may, is prone to follow the line of the lymphatics. In a crude and imperfect way we understand where these lymphatics run.

Surgically they are exceedingly difficult to follow. The knife does not discriminate closely. The operator is often unable to do so. They are countless in number, almost invisible until seriously infected. In operating, provided they are not yet infected, or have up to that time resisted infection, or providing you remove them completely with the growth, well and good; but can any man, be he ever so bold, ever so thorough and skilful, be *sure* that he has removed all of them?

But apply the cancer paste and watch the result closely. It is worth while. See the cancerous mass itself turn purple or black and become necrotic; see the paste destroy prolongations running irregularly here and there in apparently sound tissue. See the zone of tissue immediately surrounding the obviously cancerous mass become necrotic also, tissue presumably infected. See, as pointed out by A. R. Robinson, a zone of tissue further away and possibly contain-

ing an occasional cancer cell become inflamed and edematous; see the lymphatic vessels inflame and the lymph glands enlarge and frequently slough. Outlying cells of cancerous tissue destroyed by the arsenical poison in places perhaps wholly unsuspected. Why? Because a stream of serum saturated with arsenic flows steadily through these lymphatic vessels and glands, destroying isolated cancer cells or secondary nodules as it goes, following, from anatomical necessity, the exact track of the previously absorbed cancer poison. Nothing miraculous about it; not the so-called selective action of our writers; no following up a track by some peculiar power as a hound follows a fox; but in view of the established fact that cancer cells are prone to degenerate readily, it resolves itself into a simple chemical and mechanical action as easily understood as the fact that if you poured kerosene on your roof it would run down to the eaves and follow the conductor pipes to your cistern into the rain which precedes or follows it.

Theory, some will say, mere theory. But this is not theory. It is common sense, an anatomical principle, a fact established by physiology, by close and painstaking observation in a sufficiently large number of cases to prove the matter beyond all doubt.

An illustrative case or two will serve as well as more. A— B—, aged 73, had three cancerous growths on the face, lip and nose. Also an enlarged and indurated gland, the size of an almond, below the submaxillary, with the characteristic needle pains in it at times. This case was considered of doubtful prognosis on account of the advanced condition and evident serious glandular involvement. The paste was applied to all three cancerous foci. Within a short time the patient's face puffed up, a red streak, distinct and well marked, ran down to the chain of infected glands referred to, and the principal one became very much enlarged and inflamed. The cancerous masses sloughed out and the enlarged glands quietly disappeared. I recently had an opportunity to examine this patient after the lapse of fourteen years and find him free from any return and the gland referred to not palpable.

Other and similar cases I could cite, but it seems needless. I am strongly convinced that in such cases despite my knowledge of the presumptive location of this and other glands in the same region, I could not have excised all the cancerous tissue except in a haphazard way or by removing the entire cheek. How many other glands may have been involved to a greater or less degree in this particular case I have no means of knowing.

Cancer of the skin is, in its early stage, a purely local affection. As is common with a host of other local maladies, secondary foci and metastases occur, in the lymphatics or elsewhere. Family predisposition and hereditary tendencies, while admittedly favoring the development of cancerous growths, fail to support the theory that it is a hereditary disease, and by analogy, particularly since it has been so conlusively shown that tuberculosis is no longer to be considered a

hcreditary disease in the sense in which it was formerly regarded.

So long as carcinomatous masses are without distinct capsule, sending irregular projections into apparently normal tissue in unsuspected disections, so long as minute and practically invisible lymphatic vessels almost undemonstrable anatomically, and lymphatic glands at long distances from the site of the growth itself, are so prone to become secondarily involved, and so long as it is practically impossible to follow with the naked eye and the point of the scalpel the exact track of the infection, just so long will the knife be but partially successful in the removal of these growths. Luck may be with you or against you. Human judgment is fallible. There will be recurrences locally, secondary glandular involvement, metastases in a certain proportion of cases in spite of your best efforts. With the knife one must go very wide of the infection. Sound tissue must be sacrificed as well as unsound, since there is as yet no definite means of determining the exact limit, since the scalpel goes where it is sent and man is prone to error as the sparks fly upward. Hence much mutilation is an inevitable result in the vast majority of cases.

Right here comes in the contention of those who favor the so-called caustic treatment, and in a measure those who favor radiation in its various forms, basing their contention on a theory that certain chemical agents have a selective action upon cancerous tissue, the fact being well established that the cells of malignant growths are less resistant than the normal cells of healthy tissue, and are thus more readily destroyed. This is only a partial and very inadequate explanation of the action of these remedies.

Arsenic is a cell poison, having a markedly destructive action upon the cells of malignant growths, but, on the other hand, only a very limited action upon sound cellular structures. Other agents undoubtedly act in a similar manner, but I have had little experience with them. I use Marsden's paste* because I know how it acts. It is a tool that has become fitted to my hand, as it were. Under its use my results have been very satisfactory.

I believe that the results accomplished by following this method of treatment justify me in saying that the prognosis in skin cancer is good. The more rapidly the growth porliferates and the more fungating its character the worse the prognosis. A rough and ready rule is that a growth which has reached the size of a silver dollar or more is unfavorable for cure by this method, perhaps by any other. However, this rule is one to which there are many exceptions, depending on the situation of the growth and the extent of the glandular involvement.

In regard to the method of application I would say that the powdered arsenic and acacia is mixed upon a stiff piece of paper with water or a 10-percent cocaine solution, if the area is small, to the con-

*Marsden's paste is prepared as follows:

℞

Acid Arsenious	2 dr.
Powdered Acacia	1 dr.
Cocaine hydrochloride	15 gr.
Aqua q. s.	

—*Secrets of Specialists.*

sistency of soft putty, and then applied with a spatula over the mass to a distance in either direction of at least a quarter of an inch beyond the apparent limit of the growth. While still moist I am accustomed to apply to the surface of the paste a very thin film of absorbent cotton, which keeps the paste from cracking as it dries, and over this a coat of "new skin" or acetone collodion, which holds the application securely in position and forms a much neater dressing than the adhesive strips advised by others for this purpose.

A preliminary curetting under local anesthesia or the application of caustic potash is frequently necessary, if there is an unbroken integument, but in open ulcers is not required. The paste should be left on until there is a marked reaction, with much inflammatory edema surrounding it, and until the neoplasm turns purplish black and is evidently necrotic. In facial cancers the eye on the corresponding side will commonly be closed by this edema. It is of no consequence, since it subsides rapidly upon removal of the paste. The time of application is extremely variable, and this is the part of the treatment which is most difficult to determine, and which will tax one's judgment. One cannot lay down any fixed rule, but each case must be judged by itself, guided in a measure by the size, depth, situation, location and general character of the growth, and, in the main, by our experience in the use of the paste in former cases. It is wise to leave it on long enough. Cancer is not to be trifled with. Inefficient applications, like the use of mild caustics, only serve to inflame the growth and favor rapid proliferation. Sound tissue will not be seriously damaged by even a prolonged application. Some writers advise repeated applications, but the confidence of the patient may be lost and a failure ensue from refusal of further treatment.

The slough does best when treated by the dry method. It forms a dry black mass free from offensive odor even in hot weather, due to the embalming action of the arsenic. If separation is delayed the mass may be removed by the scissors. The use of poultices I would condemn as leading to decomposition, foul-smelling discharges, and possible infection. The resultant ulcer heals rapidly and should be treated on general surgical principles. In aged patients with feeble or sluggish circulation and lowered vitality I have been accustomed to resort to an ointment of oxide of zinc and balsam of Peru, which I have found to materially hasten cicatrization. The scar left is usually inconspicuous. This absence of scarring and deformity has always been a matter of surprise to me, since, even in cases where a large portion of the lip has been removed, the result from a cosmetic standpoint will usually compare favorably with that following excision at the hands of an expert operator.

The pain of the application is not, as a rule, very severe. I am accustomed to give a few quarter-grain morphine tablets to my patients, with instructions to take one or more at night if needed. Commonly they report that they did

not find it necessary to resort to these.

Gottheil, in his work on skin cancers, reviewing his series of sixty-six cases, states that he has never had a case of arsenical absorption. I have had several in a series of cases roughly approximating twice the number of his recorded cases. Most of these were of no consequence, but in one instance I nearly lost one patient from a severe arsenical neuritis which developed as the result of absorption from the paste.

Secondary hemorrhage has never occurred in any of my cases and need not be feared, even though the ulcer prior to the application of the paste shows a hemorrhagic tendency, provided, of course, that the slough is kept free from subsequent infection. Arsenic is a powerful germicide, and the slough should be easily kept in a sterile condition by dry dressing with any of the numerous efficient germicidal drying powders, preferably *Chinosol*. It is to be remembered that the danger of arsenical absorption is greater if a weak arsenical powder is used and greater, too, in proportion to the area to which it is applied. It is a powerful agent and should not be used by those unfamiliar with modern surgical methods or by those timid souls who have a fear of the knife. It is not to be used recklessly, but courageously, and with a full knowledge of its mode of action, its power, its dangers and its limitations as well. It should not be used upon the edge of the eyelid, for instance. In one of my cases the sight of one eye was lost from keratitis as a result of the arsenic getting into the eye. It is of little use in tumors of the mammary gland, and is to be superseded by the knife in growths of mucous membranes in general on account of the danger of arsenical absorption.

Iodine as an Antiseptic

Woodbury states in the *New York Medical Journal* that of all the drugs in the Pharmacopœia, the one which he has cause to eulogize the most in surgical therapeutics is iodine. Without discussing the bactericidal power of iodine in units of strength or millions of bacteria, the writer has found it practically to be a germicide unequaled by any other drug. In considering the subject of antiseptics the idea took form from the Claudius method of preparing catgut and the use of the once so much vaunted iodoform—especially in tuberculous abscesses—that iodine, in the official tincture or compound iodine solution, owing to its penetrating power in human tissues, should have a beneficial effect in wounds. The lack of other antiseptics on one occasion first put this question to the test. It was mopped, in full strength, of the tincture, in some cases of infected wounds of hands and feet of some natives of the island of Samar, and applied as a wet dressing. The result was most gratifying.

During its use for over three years in various posts in the Philippine Islands and elsewhere, the writer has yet to see a drop of pus or an infected suture in a case not already purulent, and has noted rapid improvement and recovery where the

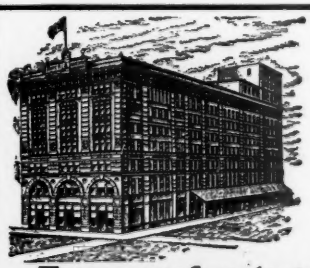
remedy could penetrate to the site of the active bacterial growth. The list includes a Cæsarian section (on a native Malay) for puerperal eclampsia, tuberculous osteomyelitis of the tibia, gunshot wounds, amputations, herniotomies, operations for varicocele, abscess of the liver, gall-stones, appendicitis, and open operations on fractures, infected wounds, palmar abscesses, boils, felons, amygdalitis, granular eyelids, foreign bodies in the flesh, and in cases of subacute gonorrhea, gonorrheal cystitis and prostatitis, endometritis, following traumatic abortion, ulcer of the cervix, and puerperal fever. From this catholic selection it may be inferred that iodine is a very valuable antiseptic.

While not heralding this as the great universal cure for surgical inflammations, yet the writer has such dependence on its reliability that he now uses the following technique for operations of whatever nature, modified for those on the organs of special sense:

The operator's hands are scrubbed with soap and water, nails cleaned and trimmed, and when ready to make the incision the hands plunged boldly into a bowl of tincture of iodine, which is rubbed over the skin to above the wrists, making what the writer calls his iodine gloves. The instruments must be boiled, because iodine tarnishes, but the experiment has been made of taking some old instruments from the shelf, wiping them with a damp towel and immersing them in tincture of iodine while the patient was being anesthetized for a minor operation. Needles and suture materials are dropped into the tincture of iodine when the anesthetic is commenced. There is no further preparation of the field of operation than a general bath, and some soap and water at the time of the operation, followed by a liberal mopping with tincture of iodine. During all operations, and especially where the wound is likely to be contaminated by purulent or other discharges, the incision is mopped with the tincture as layer by layer is exposed.—*Therapeutic Gazette.*

Need for Legislation

I have read with much interest Dr. Jakeman's article on the veterinary profession of Germany. I earnestly hope that the profession in this country may soon stand as high in scholastic attainments and in the public esteem. But in my opinion it never will until the various states enforce more legislative restriction on



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the quack horse-doctor. In rural practice qualified veterinarians are usually located thirty to forty miles from one another and consequently seldom meet. There are always empirics that can and do drift about and do this outlying work, or tell the owner it can't be done.

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I hope at the Toronto meeting some general information may be gathered of the veterinary practice laws in each of the states, and the means employed to enforce these laws.

H. A. REAGOR.

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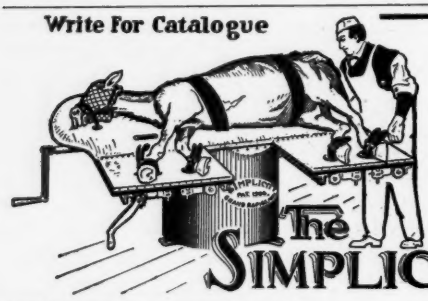

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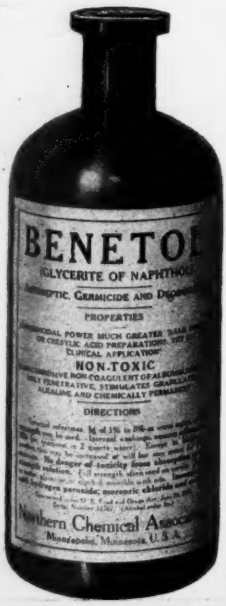

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The Precipitation Reaction of Konew*

By W. L. BOYD, D. V. S., Kansas City, Missouri

This method for the diagnosis of glanders was recently brought to the notice of the Bureau of Animal Industry at Washington, D. C., by a preliminary report submitted by Dr. D. Konew, director of the bacteriological laboratory in the Veterinary Institute of Charkow, Russia. It is based upon the fact that precipitins are formed in the bodies of infected animals from the time the infection first occurs, and probably at an earlier period than the other antibodies, such as agglutins, opsonins and the like. Our knowledge of these antibodies is extremely meager, due to the fact that they exist in minute quantities and are diffused throughout the body tissues.

Even when the smallest traces of these precipitins are present in the blood serum of glandered horses, Konew states that with a concentrated solution of glanders bacilli he is able to find even these slight traces and thereby obtain a positive reaction to his test.

Mallease is prepared as follows: Young cultures of the Bacterium mallei, forty-eight-hour growth, on glycerine agar are dissolved by adding to each tube about ten Cc. of an eight-percent solution of antiformin. Antiformin is a patented mixture made by adding sodium hydrate to a solution of sodium hypochloride. This solution will dissolve the bacterium mallei in two hours, at room temperature. If the culture dissolves quite rapidly Konew adds to this solution another washed culture of greater density in order to obtain a concentrated

*Read at semi-annual meeting, Missouri Valley Veterinary Association, Kansas City, Jan., 1911.

solution of glanders bacilli. This solution is strongly alkaline, but is neutralized by adding a few drops of a five-percent solution of sulphuric acid. This solution is then filtered, first through ordinary filter paper, and then through a Berkefeld filter, that the fluid may be homogeneous and without any undissolved bacilli. This fluid Konew calls mallease.

According to its discoverer the precipitation test is carried out in the following manner: The blood taken from the jugular of the horse to be examined is collected in a test tube and allowed to remain at room temperature until the serum separates from the clot. To produce the reaction one or two Cc., depending upon the size of the test tube, of mallease is poured into the bottom of a clear test tube. The serum of the suspected animal, obtained as above, is then introduced into the tube containing the mallease, by means of a pipette, in such a way that the two fluids will not mix. When the pipette reaches the bottom of the tube, then the serum is allowed to escape slowly; as it has the higher specific gravity, the mallease is caused to float upwards. After the serum has escaped, the finger is again placed over the pipette, which is withdrawn carefully, so that the fluids remain unmixed.

In case of a positive reaction, a white ring will develop at the plane of contact of the two clear solutions, as a result of precipitation, which is well marked in good daylight, when the tube is held before a window against some dark object. The ring usually appears immediately in severe and chronic cases of glanders. In less marked cases, when the lesions are slight, the precipitation reaction appears only after five to fifteen or twenty minutes. In this method of diagnosis it is well to follow Dr. Mohler's suggestion and use a few drops of methylene blue for the color contrast, which makes the ring appear more distinct. This white, cloudy ring is somewhat similar to the white ring formed by the presence of albumen in the nitric acid test of urine.

The two important factors which make this test a practical one are: (1) The very simple technic required, and (2) the fluids used are without danger to the operator. Konew has applied this test to 100 horses which were simultaneously tested by the agglutination test and also by the mallein test. While in most cases the three tests corresponded at the same time, the precipitation test had the preference in that it did not give doubtful results; that is, in the cases in which the agglutination appeared in a dilution of 1 : 500. The precipitation test gave positive reactions in certain cases of glanders in which the lungs and mediastinal glands or lymph nodes showed involvement without other tissue changes. From these tests Konew drew the following conclusions:

1. By using the concentrated solution of glanders bacilli (mallease) the precipitation test is a reliable diagnostic method even in the earliest stages of glanders.

2. Because of the simple technic and the short time required for the examination (about one hour) the precipitation test should be preferred to any other method of diagnosis.

3. Blood from the horses to be examined should be taken before mallein is injected.

4. The solution of mallease must be titrated in accordance with other standard serums before being used, and therefore they should be prepared in bacteriological laboratories.

Case 1.—A bay gelding in a rather poor condition, rough coat, sub-maxillary lymph nodes indurated and hypertrophied, cutaneous nodules along the lymphatic channels inside of the hind legs. Precipitation test gave a positive reaction in about ten minutes. Reacted to mallein test.

Case 2.—Animal was noticed to be rapidly on the decline, besides the emaciated condition there was a sticky, tenacious, mucopurulent discharge from both nostrils. He gave a positive reaction to the precipitation test. He also gave a typical reaction to mallein.

Case 3.—Bay horse in seemingly fair condition. The nasal mucous membrane showed ulcerations and a slight discharge of a sanguinous character. The precipitation test gave a positive reaction, as did also mallein a few days later. Both reactions were typical.

Case 4.—A gray horse, the mate of Case 3. This case proved to be a very interesting one, clinically. It seemed to be the more severe case, the ulcers on the nasal mucous being more pronounced, yet, upon making a precipitation test, the white, cloudy ring was not very distinct and appeared only after about twenty minutes. Perhaps this atypical reaction was due to faulty technic. Incomplete autopsies of both of these animals showed ulcers invading both the nasal mucosa and submucosa. The mallein test gave a rather typical reaction in this case, although the animal had a high preliminary temperature and would not ordinarily have been given the mallein test on account of this high initial temperature.

Case 5.—In this case the serum was sent in from out of town for diagnosis. The white ring appeared almost instantly, making the reaction a positive one.

Case 6.—Serum from three horses sent in by Drs. Hoag and Swift of Ft. Worth, Texas.

a) Black mare, Emma, gave a positive reaction to the precipitation test, also reacted to the agglutination test.

b) Colt Patchen, gave only a slight reaction to the precipitation test and no reaction to the agglutination test.

c) Brown horse; gave a positive reaction to the precipitation test, also gave a reaction to the agglutination test.

I have also carried out this test on animals that were suffering from various diseases, such as fistulous withers, poll-evil, cartilaginous quittor, exuberant granulations following wire cuts, and horses that were apparently normal in every respect, and in no instance have I been able to find even the slightest trace of a white, cloudy ring at the plane of contact of the two fluids.

The Physiology of Parturition*

By R. F. BOURNE, B. Sc., D. V. S., Kansas City, Missouri

In making a comparative study of the reproductive processes of vertebrates we find that the eggs of mammals, unlike those of the other vertebrates, are comparatively poor in food materials and therefore, during their incubation, require additional food. This food comes to the embryo through the circulatory system of the mother and the fertilized egg must therefore remain within the body of the mother until that degree of development is reached which will enable the new animal to battle with conditions of the external world.

On account of this advanced development the fetus cannot pass freely through the birth canal and the act of parturition becomes a more or less painful and laborious process hardly to be compared to the egg-laying of the lower vertebrates. Exception must be made to this, however, in the two lower orders of mammals, the first of which lays eggs similar to those of a bird; the second (including the kangaroo and the opossum), giving birth to very immature young with no placentæ, which are placed in a pouch and nourished by the mammary secretion until well matured.

As the mammalian embryo begins to grow, certain adjustments of the maternal organs to meet the new conditions must necessarily occur. Not only must these organs adapt themselves to the new requirements, but there must also be acquired a force for the expulsion of the fetus when it shall have reached the proper stage of development, and provision made for its nutrition when the connection between maternal and fetal circulations has been broken.

The structural changes which occur are most evident in the body and horns of the uterus and in the mammary glands. There are, however, many other organs involved, exhibiting either structural or functional changes, or both. The heart undergoes a physiologic hypertrophy, the activity of all the excretory organs is increased and the body weight usually increases, independent of the added weight of the fetus. The vascularity of the uterus increases as pregnancy advances in order that the needs of the growing fetus may be cared for.

The cause of these changes is somewhat obscure. It seems probable, however, that there is poured into the maternal circulation, from some source, a chemic stimulus to the various organs and that nervous reflexes are not responsible for the changes. In so far as the uterus is concerned it has been proven that all the changes incident to pregnancy occur when its connection with the central nervous system has been destroyed.

*Read at semi-annual meeting, Missouri Valley Veterinary Association, Kansas City, Jan., 1911.

In support of the above statement and pointing to the fetal body as the source of the chemic stimulus, it has been shown that the injection of extracts of bodies of fetal rabbits into virgin females induces a development of the mammary glands identical to that occurring during true pregnancy. Along with this we should not lose sight of the probable part played by the corpora lutea. These bodies occur within the ovary at the site of every ruptured Graafian follicle but only reach important size and activity in case the ovum originating from such follicle becomes fertilized. Under these conditions it seems to have some important connection with the intrauterine nourishment of the embryo since a loss of the corpus luteum is followed by abortion.

When pregnancy is well advanced those signs which are considered indicative of approaching parturition are:

1. Functional activity of the mammary glands is one of the usual manifestations, but is oftentimes misleading, since it may begin long before parturition or may be only slightly evident even though parturiency be near at hand.

2. A relaxation of the structures of the pelvic canal, to permit of greater dilatation. The sacro-sciatic ligaments appear to be involved in this relaxation and a depressed appearance of the muscles of this group results.

3. A greater or less obliteration of the cervix uteri and a beginning relaxation of the os.

4. The vaginal passage, especially in the cow, is lubricated at this time by a viscid, ropy mucus, and the vulvar lips hang loosely and wide apart.

All these organic changes have for their purpose the preparation of the mother for parturition. The so-called labor pains originate from rather mild, infrequent contractions of the uterine wall. The animal exhibits signs of discomfort and has an anxious expression. If unconfined she usually isolates herself to be free from annoyance.

The uterine contractions become more and more frequent and the accompanying pains more severe until the behavior of the mother is often the same as that exhibited in a mild attack of colic. As the contractions increase in intensity the voluntary muscles of the abdomen, including the diaphragm, are brought into use. The force which they are able to exert upon the uterine contents is increased by inflating the lungs and closing the glottis. This accounts for the lessened efficiency of such contractions when a trachea tube is inserted. However, the uterine musculature alone may be capable of expelling the fetus, as has been demonstrated in animals with a paralysis of the abdominal muscles. In fact, animals have been known to conceive and deliver their young unassisted after division of all the nerves supplying the uterus. This would indicate that the uterus either contains local nerve centers controlling its contractions, or that there is elaborated in the body some chemic substance which acts as a direct stimulus to the uterine muscles.

It has been suggested that when the fetus reaches a certain degree of development, the waste products of its body are in excess of what the maternal organs are capable of eliminating and hence accumulate within the mother's blood where they act as the stimulus which causes the fetus to be expelled. This theory has not been proven and there appears to be insufficient evidence for its adoption.

The force applied to the uterine contents in the expulsive efforts is equally distributed by the fluids contained within the fetal membranes. This so-called water bag is forced into the os uteri and brings about a considerable dilatation of that opening before the extremities of the fetus proper have entered it. This means of dilatation is an important one, since the force is virtually hydraulic and is not apt to damage the walls of the passageway. The forefeet and nose, however, are soon serving as a wedge to still further dilate the canal, the dilatation being maximal when the shoulders of the fetus are making their passage. The extreme stretching and sometimes tearing of the tissues naturally makes the act a painful one, especially in the mare or cow, where the fetus is relatively large. After the passage of the shoulders is effected, the act is as a rule soon completed, inasmuch as no further serious impediment to progress is offered, the pelvic girdle of the fetus passing with comparative ease through the already dilated canal.

The duration of the entire act is obviously variable. In mares or cows which have already borne one or more young it is performed with greater ease than in primaparae. Ordinarily parturition in cows is slower than in mares and even though it may be greatly prolonged, the fetus has a good chance of being born alive, since the detachment of the chorion from the uterine mucosa takes place only gradually and thus a connection between the maternal and fetal circulations is maintained. In the mare the placental attachments are easily broken and delayed delivery usually means death to the foal.

Towards the close of the act most animals assume a recumbent posture and by so doing lessen the danger of injury to the fetus. The umbilical cord may be ruptured during delivery or shortly afterward, especially if the mother retains the after-birth and rises to her feet. If the fetal membranes are expelled with the fetus, or immediately after it, the umbilical cord may be ruptured only by the movements of the new-born animal itself. Delivery of the fetus without rupture of the enveloping membranes sometimes occurs in swine (perhaps also in other animals), and if not soon discovered of course leads to suffocation.

Expulsion of the fetal membranes, in mares, ordinarily occurs shortly after birth of the foal, or coincident with it, and is effected by a continued contraction of the uterine muscles. In cows the expulsion of the placenta is not so prompt, due to the intimate connection existing between the maternal and fetal cotyledons. Prolonged retention of the after-birth, in these animals, followed by decomposition, is a common source of trouble which is often difficult to correct.

Many mammals devour the placental membranes soon after parturition. The reason for this is not understood. This occasionally leads to obstruction of some part of the alimentary canal, although as a rule it is attended by no difficulty.

Following confinement the uterus rapidly shrinks, gradually approaching, but never reaching, the size of the virgin organ. Other organs gradually assume their natural positions, and the female after a brief period of rest begins the production of ova, exhibits signs of estrum and is again ready for conception.

Our Conception of Immunity*

By D. M. CAMPBELL, D. V. S., Chicago, Illinois

Many centuries ago the Greeks, and probably long before their time the Egyptians, possessed a considerable knowledge of medicine. Their knowledge of therapeutics, though more empirical than our own, was still fairly comprehensive. They correctly understood anatomy and knew much of physiology, even understanding the circulation of the blood, which was rediscovered by Harvey in 1628.

The knowledge of medicine possessed by the ancient civilizations was nearly all lost subsequent to the decadence of the Roman Empire and remained unknown during the long centuries of political and religious turmoil in Europe, to be rediscovered during the sixteenth and subsequent centuries.

Modern anatomy may be said to have been founded by Vesalius in 1543 and modern physiology by Laviosier, who proved in 1783 that life is a chemical phenomenon. But any accurate knowledge of the finer vital structures was of course impossible until the microscope had been brought to some degree of perfection and the foundation of cellular pathology and cellular physiology may be said to have been laid during the first half of the nineteenth century.

Since the great Virchow set pathology on a firm basis progress has been steady and in no other sphere so great as in the sphere of infectious diseases. Not only have we learned that these disorders are due to the invasion of the body by minute living organisms—generally vegetable but sometimes animal—but the method by which they produce their effects has been discovered and some of their toxins produced in artificial media. Further than this, the method by which the body resists these invaders has been to some degree elucidated and a scientific treatment for a number of infections has been worked out and very much more is promised as a result of investigation now being carried on.

Every important discovery in the realm of infectious diseases has to a greater or less extent modified existing conceptions of immunity.

*Read at annual meeting of the Iowa Veterinary Association, Marshalltown, January, 1911.

It is interesting and instructive now to view in retrospect the changes that have occurred in our accepted theories of immunity as one after another important advances have added to our knowledge of infections.

It has for ages been known that persons who had suffered an attack of certain diseases did not readily acquire the same disease a second time. It was this knowledge that led Europeans in ancient and mediæval times, and the Chinese very much earlier, to resort to inoculations from mild cases of smallpox to guard against severe attacks of that then universal malady.

It was in 1796 that Jenner performed his first vaccination and in 1798 that he announced the most important single discovery ever made in the production of immunity.

The nature of infection was at this time unknown and it was of course impossible to explain the method by which one attack of certain infection protected the body from further attacks. It remained for the science of bacteriology to explain this, but before the actual discovery of any of the bacteria was made it had been suggested that there must be a *contagum vivum*. This theory was based on the fact that since in most cases it required only an infinitesimal quantity of the infection to convey the disease from a sick person to a well one there must take place some multiplication of the infection in the body of the latter. This multiplication distinguished the infection from an ordinary poison. In 1840 Henle suggested vegetable organisms as the causal agents in infective diseases and later Trousseau definitely asserted that such would be proven to be the case.

The question was brought a long step nearer to solution by the discovery by Pasteur that fermentation was due to a yeast plant, i. e., the *Saccharomyces cerevisae*. The analogy between the process of fermentation and the course of infective diseases was seen to be very close. The inoculation corresponded to the addition of yeast to a saccharine solution. The period of incubation corresponded to the time during which no changes could be observed in the liquid. The onset of disease and rise of temperature was analogous to the beginning of fermentation and evolution of gas, while the decline of the disease corresponded to the spontaneous cessation of fermentation.

The discovery of the first bacterium—the Bacillus Anthracis—by Davaine in 1850 was the natural result of the improvement of the compound microscope. It was not until 1863 that Davaine showed that anthrax could be conveyed by this bacillus and even then his claims were doubted because pure cultures of microscopic organisms could not be obtained.

It remained for Koch in 1880 to first prepare solid media on which bacteria could be grown and to isolate the pure cultures thus obtained. After this the bacteria causing many of the infective diseases were discovered in rapid order and additions to the known causes of infective diseases are still being made.

As soon as it was established that bacteria were the true causes of many diseases, scientists began to speculate upon the manner in which these minute fungi produce their pathogenic actions and various hypotheses were put forth. The anthrax bacillus was one of the first to be studied in this connection and it was discovered that the rod-shaped organisms occurred in the blood in countless numbers actually blocking the smaller blood-vessels in animals that had died of anthrax. This blocking of the blood-vessels—a process analogous to embolism, was thought at first to be the cause of death, but this view was untenable when it was later shown that in other infective diseases the bacteria are comparatively few—no masses occurring and in certain diseases, as diphtheria and tetanus, the bacteria are localized, i. e., they do not occur in the blood at all.

The hypothesis was also offered that the bacteria produced their injurious effects by using up all the nourishment circulating in the blood and thus destroying the tissue cells by starvation. This was abandoned for the same reason that the preceding hypothesis was given up.

Finally, after a great deal of investigation of the subject, the poisons elaborated by bacteria were found to be the real cause of their pathogenicity. Of these poisons but little is yet known. Some of them, notably the toxin produced by the diphtheria bacillus, is believed to be an albumose. The tubercle bacillus is said to form a poisonous nucleinic acid which induces the caseation of the tissues characteristic of tuberculosis. The toxins of some other bacteria resemble nothing else so much as they do ferments. In fact all bacterial toxins have properties in common with ferments, but of their composition we know almost nothing.

When it had become definitely established that a number of infectious diseases were due to the invasion of the body by certain bacteria and their growth and multiplication within the body; the question arose why did the majority of these diseases tend to spontaneous recovery? Why after the bacteria had obtained a favorable hold in the body did they after a time die out, instead of multiplying in an ever-increasing ratio until the life of the victim was destroyed? The science of chemistry was better understood at that time than the science of bacteriology, and a chemical reason was at first sought to explain these phenomena.

The first theory to explain spontaneous recovery from infective diseases was advanced in 1880 by Pasteur and was known as the *exhaustion theory*. Just as a plant cannot live for more than a certain time in a given portion of soil, dying as soon as it has exhausted all available nourishment from it, Pasteur argued bacteria must necessarily die when they have used up all of the existing material of a special kind necessary to their growth. This theory was soon abandoned, for it was shown that bacteria could be grown in juices expressed from the tissues of an animal, just recovered from an attack of the same organisms.

After the abandonment of the exhaustion theory a second theory of immunity known as the *retention theory* was propounded by Chaveau, who pointed out that the excretory products of living organisms are generally poisonous to the organisms themselves, just as the carbon dioxide exhaled by man and the higher animals is poisonous if respired. Reasoning from this Chaveau suggested that the body during an infectious disease becomes surcharged with large amounts of the excretory products of the invading organism and that these excretory products poisonous to the microorganism producing them inhibited their further growth and brought about their destruction. This is undoubtedly the true explanation for the cessation of fermentation in saccharine solutions and for souring of milk, for in these cases the bacterial activity is renewed upon the removal or neutralization of the products of fermentation. But however true this may be as applied to bacterial growth in non-living media, it cannot apply to disease in living animals, for here the excretory products of the microorganisms are excreted so that no accumulation of them takes place in the animal body and the retention theory of immunity was soon abandoned.

The next generally accepted explanation of the spontaneous recovery from disease was known as the *phagocytic theory* and was advanced by Metchnikoff, who had very carefully studied the white blood cells and had come to the conclusion that it was their destructive action upon the invading organisms that brought about recovery from infective diseases. This defensive and offensive action on the part of the leucocytes Metchnikoff called phagocytosis from two Greek words meaning "eating" and "cell." Too much credit cannot be given the great Frenchman for his exhaustive study of the part played by the phagocytes; there can be no doubt that his explanation of the production of immunity contains much of truth, but, it is equally certain that phagocytosis is not the most important factor in the recovery from, or immunity to, disease.

The opponents of the phagocytic or cellular theory of immunity soon advanced what was known as the *humoral theory*. Maintaining that it was not to the cellular elements but to substances in fluid elements of the blood that immunity was due. To these substances Buchner gave the name of alexines.

This theory has undergone a number of changes as the nature of immunity has become better understood, but it is still adhered to and constitutes the basis of all subsequent theories of immunity.

There are numerous phenomena connected with immunity that are not yet fully explained by any theory.

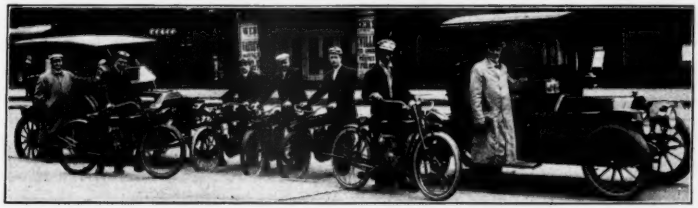
As a result of a vast amount of research by Nuttall, Kitasato, Behring, Wernicke, Pfeiffer, Ehrlich and many others, a theory of immunity has been developed called *Ehrlich's side chain theory* which is a sort of composite of the phagocytic and humoral theories, but is based chiefly upon the latter. It refers to immunity to the toxins

produced by the bacteria and not to the bacteria themselves. This theory is that toxemias result in combinations between the toxins produced by the infecting organism and certain cellular elements of the blood. He claims that this combination is essentially a chemical one and occurs by means of, or through, certain groups of elements or receptors that are analogous to what are called side-chains or lateral chains in organic chemistry. When these side-chains do not exist, either on the part of the toxin molecules or the cellular elements of the blood, the toxin is powerless to do harm. According to Ehrlich an antitoxin is certain elements in the blood that combine with the toxin molecules and thus prevent their combination with the cellular elements of the blood by using up, so to speak, their side-chains or combining group.

More recently still Wright has announced his *opsonic theory*, which is to some extent an embodiment of all the preceding theories, as it accepts the correctness of Ehrlich's theory as far as that theory goes and in addition points out the importance of certain chemical substances in the production of immunity, thus to some extent reverting to the retention theory of Pasteur. Adherents to the Metchnikoff school claim that the leucocytes produce the alexins, in this respect also differing from the claims of Wright.

Wright's opsonic theory of immunity in no way controverts either Ehrlich's side-chain or Metchnikoff's phagocytic theory, but goes a step further and holds that in the fluid portion of the blood there is produced certain chemicals that have the power of weakening the invading organism, thus rendering them more easily destroyed by phagocytosis and capable of producing lesser amounts of toxin.

Thus our present theory of immunity has been built up as a result of much study of the subject and a discarding of a number of theories soon after they were advanced. The present theory does not answer all of the conditions necessary to establish it as a fact, but it is believed to be in the main correct.



Wright & Merillat's "Flying Squadron," 1827 Wabash Avenue, Chicago
From left to right the veterinarians shown are: Dr. L. A. Merillat, Dr. T. B. Crowe, Dr. C. O. Kroener, Dr. E. B. Thomas, Dr. L. Barret, Dr. W. C. Gaber, and Dr. J. M. Wright. Drs. Wright and Merillat would gladly discontinue the use of motor-vehicles if their clients would do likewise; but while the "other fellow" uses autos they want whatever of advantage this means of transportation possesses.

The B.-A.-I. Field Man in Britain

By LLOYD CHAMPLAIN, A. B., D. V. S.

[*EDITORIAL NOTE.—Dr. Champlain of Kansas City is spending a couple of years investigating dairy conditions in Europe. This is the second of a series of letters which he has consented to write for* VETERINARY MEDICINE *on European matters of interest to veterinarians in America. The third letter will appear in an early number.*]

Until I learned better I supposed that the field of the U. S. Federal Veterinarian was United States territory. That was a very ordinary sort of supposition for one not familiar with the animal industry of the United States and the purposes and methods of the Bureau of Animal Industry. That the United States should have her veterinary scientists stationed in foreign countries at a very considerable expense needs some explanation, even yet, for many busy practitioners whose activities have not brought them to face the problems of importation; while the actual work of the veterinarian abroad is full of interest to all.

All new countries are importers of animals. This is particularly true of such a resourceful and progressive country as the United States. The fact, moreover, that the United States is the rendezvous of men from all nations who long for the sight and touch of the animals that they were accustomed to in the "Old Country," encourages importation from every land of every sort of domestic beast with all its virtues and diseases. There is no other country in which so many breeds of every sort of domestic animal are so well represented as in the United States. She has more Jerseys than there are in Jersey; more Guernseys than there are in Guernsey; more Herefords and Shorthorns than there are in England; more Holsteins then there are in Holland, and so it might be said of many breeds, always remembering that it signifies such an activity in importation as characterizes no other country and exposes the United States to the introduction of diseases that ravage the countries from which the animals are exported. Right now a little laxness of vigilance would be an invitation to foot and mouth disease from England, and this disease is always lurking about the shores of Europe waiting for a chance to pass over to the great free country. The same is true of the tubercle bacillus that is so prolific in the antiquated vaccaries of Europe, and then there is the disease that Prof. Bang demonstrated in Jersey, called "John's Disease" (otherwise known as "Chronic Bacterial Dysentery"), but which was known long before in Continental Europe, and there are others well known and some that have not yet been discovered, maybe. All of these must be repelled from our shores and it seems that the easiest, surest, and all-around best way is to prevent their embarkation at foreign ports, with a second safety check in

our quarantine stations at our own seaports. This, then, is the work of the B.-A.-I. field man in Britain.

The field is geographically Great Britain (England, Scotland, and Wales) Ireland, the Channel Islands (Jersey, Guernsey, Alderney and Sark), and the Netherlands. The field is, otherwise, the commercial and shipping gateway of Europe; the home of the greatest maritime nation of the world; the seat of concentrated British wealth and culture; the cradle of the English tongue and its illustrious literature; the vine-covered-castle land of a one-time monarchy; the museum of an obsolete knight-errantry; the birth-place of nearly every improved breed of domestic animal; it is, in short, the great out-of-door university for post-graduate work in almost every branch of learning, and, if, it may be granted that the veterinarian has a right to know anything besides medication and surgery and to enjoy the delicacies of culture it is particularly good for him.

In Scotland his opportunities are of the best for observing the character of the Anguses, Galloways and Ayrshires in their native pastures, on their native feed and under the care of their native breeders. While making his examinations and tests of the animals selected from these breeds for exportation to America he is associated with the breeders and can gather by tactful conversation the sum total of Scotch knowledge on the subject of breed-making and the Scotch ideas of judging these breeds. He has before him, or easily accessible, hundreds of the breed that he is studying and can note the characters that are constant and those that are variable as it would not be possible for him to do at the cattle show or in any land where the breed is more scattered and less pure. He has likewise at hand the Clydesdale horse and the various breeds of dogs and other animals that are products of Scotland and which, because of their popularity in America, he will do well to study in their native habitat.

In Ireland he finds the Kerry and the Dexter cows and has the liberty to form some ingenious opinions as to their origin and ancestry. The latter is even smaller, at least lower, than the former and he may decide for himself, at first-hand study, whether it is a degenerate strain of the Kerry or whether it is an independent sister or cousin breed. He has the privilege to observe the milking qualities and the feeding habits of these pigmy cows, and to confirm or deny the story of their wonderful milking qualities.

In Wales, across the channel from Ireland he can see the Black Welsh cows and note their likeness to the Kerry and Dexter in respect to horns, color and conformation. He can associate this breed and the blacks of Scotland, on the one side with the Irish blacks on the other and note that they occupy the same territory except for the water that divides them. It is up to him, then, with his splendid opportunities of conversation and research of history, to work out the relationship of these black breeds.

In England he goes to Hereford County where Americans pay big prices for select specimens of the Hereford breed. He goes to Devon County, on the extreme south, to test a bunch of Devons for American importation. He goes to Durham in the far north to pass upon the health of a purchase of Shorthorns. He goes into every quarter and land's-end in England to certify the health-condition of Ayrshires, Galloways, Anguses, Red Polls, Shorthorns, Kerrys, Dexters, Herefords, Devons, Lincolnshires, Jerseys and Guernseys, for they are all bred everywhere in England for exportation. He sees, everywhere, the thoroughbred and hackney and the almost innumerable breeds of dogs, sheep and swine for which Great Britain is famous, and which are more or less known in America. He works in the shadows of historic castles, in the haunts of ancient Bards, and by the streams and lakes and seashores that recall volumes of verse and prose, rich in the best of human thought.

In Guernsey. After a rollicking sail of 120 miles from Southampton or 85 miles from Weymouth, he has a study of the Guernsey cow, from which he may be diverted only by the numerous things of beauty and interest, and the splendid hospitality of the people, for there is no other bovine breed allowed to live within the shores of that island. The few bovines of other breeds that are landed there are for slaughter and must be killed at the docks. Here he has the best example of intensive farming that the world affords. Upon this little triangular island, that if put into a square would be less than five miles across, are 42,000 persons with about 6,000 of cow population. These figures are more and more impressive as one observes that after deducting the space occupied by the enormous industry of growing under glass, the area occupied by buildings and about 250 miles of public road there is less than one third of the land available for the production of cow feed.

In Alderney, the wild little island that is nearly blown away by the fierce winds that sweep down the channel, he finds the breed that went for centuries by the name of Alderney, but now known as, and by the consent of the inhabitants called, Guernsey. He can train his eye to look for any difference between these former Alderneys and the cows of Guernsey, and speculate along with others as to how these cattle ever got on these islands and what they looked like before they became Alderneys and Guernseys. He can see here the strongest things in the way of parcelling out land for cultivation that ever came beneath his eye.

In Sark, or rather, in this case, *on* Sark, which is so cliff-bound that he can inhabit it only by entry through a tunnel under peaks of granite, he finds the Guernsey cow again, for this island like Alderney belongs to the bailiwick of Guernsey.

In Jersey there is no breed of special veterinary interest except the Jersy. Much has been written about its freedom from tuberculosis in its native island, but, is not the opportunity to know by personal inves-

tigation whether tuberculosis is there quite enough, and if it be found by the tuberculin test and subsequent exposure of the lesions, to have the privilege of knowing for himself by microscopic examination and cultures whether it is of the human or bovine type? The history of bovine tuberculosis in this island is most interesting, and if it be true, that the bacillus is only of the human type, it is doubly important.

Here chronic bacterial dysentery of cattle is supposed to be induced by the feeding of roots—some say unripe roots. If he can not find any relation between unripeness and the germ it is his privilege and opportunity to look for the germ, or its spores, in the soil eaten with the roots.

In Belgium and Holland are the famous breeds—the Belgian draft horse, and the Holstein and Dutch Belted cattle, but not these only, for these little countries are quite cosmo-national—they are so related to the Germanic and Roman countries of Europe that they possess the best of everything on the continent, veterinary science included.

I claim this field, then, for post-graduate work as the cream—nay, the double-cream—of the world. I have referred to only a few of the subjects for study, by the way of calling attention to national or provincial characters. Besides the many other objects of interest there is the unequalled opportunity for comparison—comparative insanitation and bovine tuberculosis, comparative prophylaxis, comparative medication, and, if he wants to go outside the realm of veterinary science, he is almost unlimited in his scope of comparative observations.

The field is occupied, at present, by Dr. E. P. Schaffter, who began work with the Bureau at Kansas City in 1895 and who was subsequently stationed at Cleveland until his appointment to this position in 1909.

It has been my good fortune to be able to be with Dr. Schaffter at work on several occasions during the past winter and to know from personal observation the character of the work and the qualifications requisite to its performance. He was not stationed in Europe for the purpose of providing information for publication over my signature. Indeed, his findings, though interesting they would be, and valuable as they are to science and the Department of Agriculture, are not at all germane to the subject of this sketch, but the goings and comings and doings and associations and annoyances and strategies and tactics and opportunities of the federal servant are matters of broad daylight.

If I have seemed to set forth the idea that this work is merely nominal—that it is a sort of perfunctory office that provides the Bureau with an excuse for sending pet employees on excursions of travel, let us correct that at once. Though I have fallen far short of fulness in my reference to advantages offered by the position, it is nevertheless most arduous, at times. Travel, when forced upon one, loses much of its charm, but when it has to be done to the tune of another's fiddle it becomes much like work.

The permits to import are obtained by the importer from the Secretary of Agriculture—the importation being contingent, of course,

upon the veterinarian certificate of health. Selections for importation are made in every quarter of the field, contracts are made for shipping and such a series of events prearranged that the schedule must be carried out without a break lest all be put askew. Sometimes the cattle assembled for the test are many—too many for one veterinarian, I would say, if I were the veterinarian; sometimes only two or three. I was with Dr. Schaffter and a bunch of ninety in Jersey and when he came again about four weeks later it was to execute the process of the tuberculin test on one hundred and seven in the two days scheduled for the work. He made his own insertions, readings, injections and temperature records. During the four weeks intervening he had been, I believe, in every island of the field and many places in England and Scotland, rushing to catch a train here and a ship there, regardless of sleep, meals or weather.

In some places the accommodations are very good as in Jersey where the cattle are assembled for the test in a splendid pavilion which belongs to the Royal Jersey, Agricultural and Horticultural Society; in others they are very uncomfortable. These old countries are not full of new ideas about sanitary stables and ventilation. When the doctor is called to make tests in private stables he is likely to get nearly drowned in the shadow of a candle-stick. He must at least, for decency's sake, wear a pair of good, high, feet-sweating rubbers, and in many cases he should have an air filter attached to the end of his nose.

The qualifications, aside from those considered by the Civil Service Commission, are:

1. Tact. The veterinarian is in many cases thrown into the company of a family where the tests are being made. He cannot, of course, seal his mouth and refuse to talk—he must keep the conversation trending as far as possible away from matters that he does not wish to discuss outside of official circles. When he fails in this he is likely to be asked, point blank, for information that is wholly at the disposal of officials higher up. If improper questions are put he must know how to reply evasively without offense. In communities where there is much jealously and tale bearing—and they are very common and pronounced in long settled and circumscribed localities like the smaller islands, for a good example—he must be very tactful about allusion to what he saw, heard, tasted, felt or smelt at some other place or he will find himself involved in a war of tongues. He must hear the shortcomings of the neighborhood recited, and never doubt the truth of it, but be wholly unable to contribute to the sum total of human knowledge on that subject or even to confirm a single fact recited. He must have a proper regard for little superstitions that are very real to his hosts and will do him no harm. He must allow the uncontradicted recital of cures of veterinary and human maladies. When he is told about the "bone-setter" resetting a small bone in an anatomical region where there is no small bone he must remember that he was not sent there as a missionary of anatomy, and where he sees them giving worthless agents of supposed

medicinal virtue he will do well not to expose his ignorance of medicine. He must be non-committal where pronouncement is not required. It would be untactful to reject an animal with a declaration that it is tuberculous when a statement that he could not pass it would do as well.

2. Firmness. He must know his function, his privilege and his authority, and, though affable and yielding in matters of no consequence he must hold within his own counsel a perfect understanding of his own work and make his "yes" or "no" the last word on the subject.

It is a position that many a young man could fill to the credit of himself and his country and one that offers such advantages as go with no other position at the disposal of the Bureau of Animal Industry.

Vesicular Exanthema of the Horse*

By N. J. MILLER, M. D. C., New Windsor, Colorado

A vesicular eruption in horses characterized by the formation of nodules, vesicles, and pustules in the mucous membrane of the vagina and the skin of the vulva and the penis.

The nature of the infective matter is not precisely known, but the disease can be transmitted with the greatest facility as has been proven by experiments and also in the field of practice. The infective matter is found only in the contents of the vesicles and pustules and in the secretions of the ulcers.

The usual mode of infection is by coition, although it may be transmitted by other means. Colts often become infected on the lips and mouth, around the eyes and on the hind quarters from nursing an infected mother.

An attack does not render immunity. The eruptions may sometimes be transmitted to man, but the condition is never serious. The usual symptoms besides the eruptions are swelling of the arm and fever.

SYMPTOMS.—The period of incubation is from twelve hours to six days. In mares the first change noticed is dark red spots appearing on the mucous membrane of the vagina, most numerous about the clitoris. These spots are of the size of a pin-head or a little larger, and soon change to vesicles and pustules. These vesicles are at first transparent, but later on may change to various shades of orange. After the pustule has developed there is left a flat ulcer with a deeply reddened base and secreting a sticky, yellowish fluid. On the outer surface of the vulva and the under surface of the tail these ulcers may become confluent and on healing leave a white, smooth, cicatrix.

There are frequently in these cases great sexual excitement and an increased desire to micturate, but no fever or other constitutional dis-

*Read at semi-annual meeting, Colorado Veterinary Assn., Ft. Collins, June 2 and 3, 1911.

turbance. In stallions the penis is swollen and externally reddened and covered with pimples, vesicles and pustules, which form ulcers, and upon healing leave an unpigmented cicatrix as in the mare. In some cases the eruptions extend onto the sheath and scrotum and even onto the hind legs, while in a few cases the throat and forelegs are infected from covering an infected mare.

In severe cases the ulcers become very deep and extend over a large surface, while at the same time the animal shows a high fever, stiff gait and emaciation.

TREATMENT.—The disease usually runs a benign course, and the patients recover spontaneously in from three to four weeks. However, it is well to use disinfectants and astringent solutions, such as phenol, creolin, alum, etc.

My attention was first attracted to this disease May 1, 1910, when I was called four miles south of Johnstown to see a mare suffering from this disease. The history of the case was that about five of six days before she had been bred to a stallion evidently infected, as at that time there were several mares in that neighborhood infected, all having been bred to the same horse. This mare showed the vesicles and pustules in the mucous membrane of the vagina, they being especially numerous in the region of the clitoris. There was a large ulcer on the outer surface of the vulva and one at the upper commissure. These as well as the pustules in the vagina showed the characteristic secretions. I irrigated the infected parts with liquor cresolis solution. I saw the case again on May 7th, and the ulcers were healing nicely, leaving small white scars.

Parturient Paresis; Parturient Apoplexy; Milk Fever*

By RICHARD EBBITT, M. R. C. V. S., Grand Island, Nebraska

When I look back over a period of thirty years of practice and see that during the first twenty years I had some of the very best of dairy cows die from parturient paresis, while I looked on helpless, I feel somewhat ashamed of myself.

Professor McCall of the Glasgow Veterinary College taught his students (and I was one of them) that it was apoplexy. His theory was that the blood that went to nourish the fetus was thrown into the circulatory system after parturition, causing a congestion, and nearly always an effusion into the brain structure or cerebrum. This theory looks plausible, but will not bear much investigation.

Professor Williams, of Edinburgh, whose works were the standard ones in the English language, for years and years defined it as a par-

*Read at semi-annual meeting, Missouri Valley Veterinary Association, Kansas City, Jan., 1911.

turient disease, characterized by suppression of the lacteal secretion, congestion of the brain and apoplexy.

Do you wonder with such teaching that we English speaking students were such numb-skulls, or, as you call it in this country, boneheads, for their treatment was worse than their theory.

After returning to Ireland and practising there, I found that Mr. Dunlap, a veterinary surgeon in Belfast, was using chlorate of potash in four-ounce drenches, and was having some success. I followed the treatment I was taught at college, and with little or no success. It was bleed, stimulate with whisky, and if the animal could swallow, to give a large dose of Epsom salts. It is needless to say nearly all of my milk-fever patients died.

Perhaps the oxygen liberated by the chlorate of potash was the reason why Mr. Dunlap was fairly successful; and, by the way, this was the gentleman who invented the pneumatic tire and has given his name to it. A fraction of the air that has gone into his tires would have saved nearly all Mr. Dunlap's cases.

I have never seen a case occur at first calving, and very seldom at the second, but after that all good milk cows are liable to take it. I cannot recall having ever seen a poor milker affected by this disease. I do not know what theory to advance why this is so. Some say the disease is due to a toxin formed in the mammary gland, some say different. Whether we are right or wrong in our theories, at all events we are now successful in the treatment of this condition. Floating around us in unlimited quantities was the very element necessary to effect a cure, and yet how ignorant we were of the fact. Every veterinarian acquainted with me knows how little faith I have in medicines, and I must say the control of this condition is not due to medicines.

I do not want to deal in extravagant expressions regarding air, water and sunlight, but I will back them any time against the old stereotyped system of drugging.

I am no Christian scientist as some have charged me with being, but I believe this and other fads have gained a foothold through the pretensions of the medical world, and the inability to make good a number of these pretensions. I do not discard the use of drugs, but the blind belief that some people have in them is ridiculous to me. [Faith in drugs is not blind except the drugs be used blindly.—ED.]

Treatment.—There is hardly any necessity in giving the treatment for parturient paresis, for everyone knows what it is. Simply inflation of the udder with air and allowing it to remain at least twenty hours before milking it out. I have seen cows go down the second time when milked too soon. The feces is always dry and covered with mucus, in fact, it looks strange this constipated condition could arise so quickly. To relieve this I give an injection of one gallon of tepid water, and as a rule the cow is on her feet in a few hours. No heart stimulants, no medicines by the mouth, simply air and water.

Our Advertisements Guaranteed

WE GUARANTEE that every advertiser in this issue is reliable. Should any advertiser herein deal dishonestly with any subscriber, we will make good the amount of your loss, provided such transaction occurs within one month from date of this issue, that it is reported to us within a week of its occurrence, and that we find the facts to be as stated: It is a condition of this contract that in writing to advertisers you state: **"I saw your advertisement in the American Journal of Veterinary Medicine."** This guarantee does not apply to the classified advertisements on this page, many of which it is obviously impossible for us to investigate.

FOR SALE.—Well-established practice; best of clients and good pay. Good opening for right man. Nothing to sell except medicines and a few instruments. Address A. W. Beveridge, V. S., Biggsville, Ill.

FOR SALE.—A practice in an Illinois town of 8000. Established 12 years. Yearly income $2,500. Good reason for selling. Will sell residence also, if wanted. For particulars address No. 83, care of VETERINARY MEDICINE.

WANTED.—By a graduate of the Veterinary Department of the Ohio State University a position with some veterinarian; or an opportunity to purchase a standing practice, payable in instalments. Has had several years experience as a veterinary practitioner and as instructor in a university. Registered in Pennsylvania. Address No. 84, care of VETERINARY MEDICINE.

WANTED.—Bright, sober young man—graduate of a good school—with some capital to invest in hospital proposition, in town of 25,000, in the new southwest. I already have a fine practice here but need a hospital and a partner to properly care for it. Address No. 85, care of VETERINARY MEDICINE.

TO THE VETERINARY PROFESSION.—I desire to announce that for various reasons I have severed my connection with the Inter-State Vaccine Company, and am now connected with the National Hog Cholera Serum Company, room 809 Live Stock Exchange, Kansas City, Mo., where I shall be pleased to meet all members of the profession while in the city. I will have full charge of the manufacture of hog cholera serum for this firm and shall be pleased to supply your wants in any quantity. Our price is one and three-fourths cents per C. C.

Fraternally yours,

E. P. NILES, D. V. M.

FOR SALE—A practice for sale at once, in a town of 800 inhabitants, with surrounding towns same size. Good reasons for selling. County seat; no competition; nearest veterinarian 25 miles. Address No. 81, care AMERICAN JOURNAL OF VETERINARY MEDICINE, 1920 Wilson Avenue, Chicago, Ill.

FOR SALE—Good city practice with horses, rigs, instruments, etc. Ill health the only reason for selling. Good terms. Don't waste my time and yours unless you mean business. Address No. 82, care AMERICAN JOURNAL OF VETERINARY MEDICINE,1920 Wilson Avenue, Chicago, Ill.

A CARD LEDGER is the modern ledger; no closed accounts are ever in the way; no hunting for open accounts; no indexing of accounts. Every balance is shown at a glance. A complete record with the fewest written words. See the description in the advertising section. Price $3.00 prepaid.

FOR SALE—**Surgical Diseases of the Dog,** by Cecil French, D. V. S., $3.00 each, postage prepaid. This is an excellent work on the subject; contains ninety-one illustrations and more than 400 pages. It formerly sold for $5.00. Address VETERINARY MEDICINE, 1920 Wilson Ave., Chicago, Ill.

FOR SALE—New edition of Henry's Feeds and Feeding. Just off the press. Tenth edition, entirely rewritten. Recognized authority on the subject. Price $2.25, delivery prepaid. Address VETERINARY MEDICINE, 1920 Wilson Avenue, Chicago, Ill.

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Subscriptions from the United Kingdom should be sent to our London Office in care of Messrs. Bailliere, Tindal & Cox, 8, Henrietta Street, Covent Garden, London, England.
Address all communications to D. M. CAMPBELL, 1920 WILSON AVE., CHICAGO.

A. V. M. A. and Veterinary Progress

The meeting of the American Veterinary Medical Association at Toronto, Ontario, the 22nd to 25th of August will be, by long odds, the most important veterinary meeting of the year. The rapid improvement in veterinary sanitary science during recent years, the marked development of our profession generally, the greatly improved conditions under which the practitioner must labor, the remarkable advancement of veterinary schools and veterinary instruction, and the augmentation of the public's estimation of the veterinarian's work during the past quarter-century, are all much spoken of and pretty generally understood though not fully appreciated, at least by the younger members of the profession; but few there are who realize to what this marked elevation of the profession is due; who know to what forces this clearer demonstration of its importance to humanity should be credited. It can not be claimed that all this is due to the efforts of any individual, for no individual, however powerful, could accomplish such a result. It cannot be due to any force outside of the veterinary profession, for we have ever received the opposition rather than the aid of those not of us. A little investigation will place the credit for the material advancement and elevation of our profession where it belongs—to organized

effort within the profession, as one of the results secured by State and other veterinary associations.

More important in its influence for our welfare than all others combined is the influence of the American Veterinary Medical Association. For nearly half a century leaders of the veterinary profession in America, the most public-spirited, the ablest and the most progressive veterinarians in this country, have annually assembled and devoted themselves earnestly to matters concerning the welfare of the profession.

The A. V. M. A. has progressed with the profession; its annual meetings are now largely attended; the topics considered in its meetings are so varied that the meeting possesses equal interest and value for the scientist, the teacher, the sanitarian and the general practitioner. Its influence is the greatest factor in the evolution of the profession and is increasing year by year.

The A. V. M. A. merits and should have the support of every veterinarian in America. No one qualified for membership in this Association should deny himself the advantages which a membership in it carries, and no veterinarian, whether a member of the Association or not, no matter what his line of work, can afford to miss the Toronto meeting. Many matters of importance, in which all should have part, will be considered and every man who attends is sure to receive substantial benefit far outweighing the expenditure. You need the Association, and the Association needs you. Meet us at Toronto!

An Early Number

For the convenience of the Transportation Committee of the Chicago Veterinary Society and the Illinois State Veterinary Medical Association who wished to make a final announcement concerning the "Veterinary Special" to Toronto; for the accommodation of veterinarians in Chicago and territory west who may at an early date wish the information contained in the transportation committee's announcement and for other reasons that are deemed sufficient we are mailing this issue of VETERINARY MEDICINE two weeks in advance of the regular date.

Has Your Subscription Expired?

As all our readers know it is our rule to discontinue all subscriptions on the date of expiration unless their renewal is received prior to mailing the following issue. Because of the early date of mailing this month we are violating this rule and sending the journal to all whose subscriptions expired with the August issue regardless of whether their subscriptions have been renewed.

This action marks no change in our policy with regard to expirations and those whose subscriptions have expired with the August or September issues must send in their renewals before September 20th if they wish to have their names retained on our subscription list and to receive the October issue.

Ordinarily we cannot supply back numbers of VETERINARY MEDICINE to those who have missed numbers through allowing their subscriptions to lapse.

British and American Local Committees

English contemporaries are already devoting considerable space to the arrangements being made by the veterinarians of Great Britain for entertaining the visiting veterinarians during the next meeting of the International Veterinary Congress which will meet in London late in the summer of 1914.

The forehanded care of the English stands in strong contrast to the procrastination of American veterinarians in matters of this nature. The Organizing Committee have already, three years in advance of the meeting of the International Veterinary Congress, planned their work and are now raising funds with which to carry out their plans. Twelve months in advance of the date of the meeting the committee expects to have every detail of the arrangements completed and the program decided upon. Their example is worthy of emulation by the local committees of our veterinary organizations.

The manner in which this organizing committee purposes to raise its funds for the meeting is also worthy of consideration by our local committees. This committee expects that $25,000 will be needed for entertaining the congress of which $15,000 to $20,000 will have to be raised by the Organizing Committee. They purpose to raise this large sum by direct subscriptions from members of the profession in Great Britain and Ireland. We believe we are correct in saying subscriptions direct from veterinarians is the last resource to which one of our local committees would turn.

In substantiation of the above we cite the means resorted to by the local committee of the A. V. M. A. for raising funds to defray the expenses incidental to the meeting which will be held in Toronto, August 22nd-25th. Let it be understood we are not offering these strictures of the local committee as such; but only for the system which in a modified form has become the rule with local committees of the A. V. M. A. We refer to the taxation of commercial exhibitors at the meetings.

Prominent among the attractions advertised for our next meeting are these commercial exhibits of which the program says: "The demand for exhibitors' space in the radius of the foyer indicates that the exhibits of special firms will be a truly educational as well as pleasing feature of

our meeting," etc. Note the exhibits are a "pleasing feature" of the meeting, they are an educational attraction and a benefit to the meeting. Why then charge the firms supplying this "pleasing feature" several hundred, probably much over a thousand dollars, for space. This meeting is to be held in a government building for which, presumably, no rental is charged, but which is furnished free by the Ontario government for the use of the veterinarians of America in annual convention assembled, not for the benefit of the local committee of the A. V. M. A. By what right then does the local committee charge for space that is not theirs and at the same time discourage the presentation of a "pleasing feature" of the meeting which by their own admission is for the general good? What are *they* giving the commercial exhibitors for the money taken from them?

The sale of privileges or concessions is wrong. The better grade of circuses are discontinuing it. The best grade of agricultural fairs sell fewer concessions than formerly. The public does not approve of it. The veterinary profession we believe strongly disapproves of it and local committees of the A. V. M. A. will have to quit it. The exhibits of such firms as add a "pleasing feature" to our meeting, we are anxious to have and that without charge. Such exhibits as are objectionable we do not want at any price.

Raising funds to pay the expenses of our meetings by taxing commercial exhibitors at those meetings is but a makeshift and indirect means since these firms must in turn collect it from the veterinary profession. As a matter of fact the entertainment local committees have been providing for those attending A. V. M. A. meetings of recent years, has been far too elaborate. A halt in the increasing expensiveness of these meetings must be made somewhere and now is the time to make it. Already the meetings of the A. V. M. A. have become such a burden to the veterinarians in the cities where they are held that but few are willing to undertake it. This is not as it should be. In the future let us look to the local committee for a place of meeting and clinic material only.

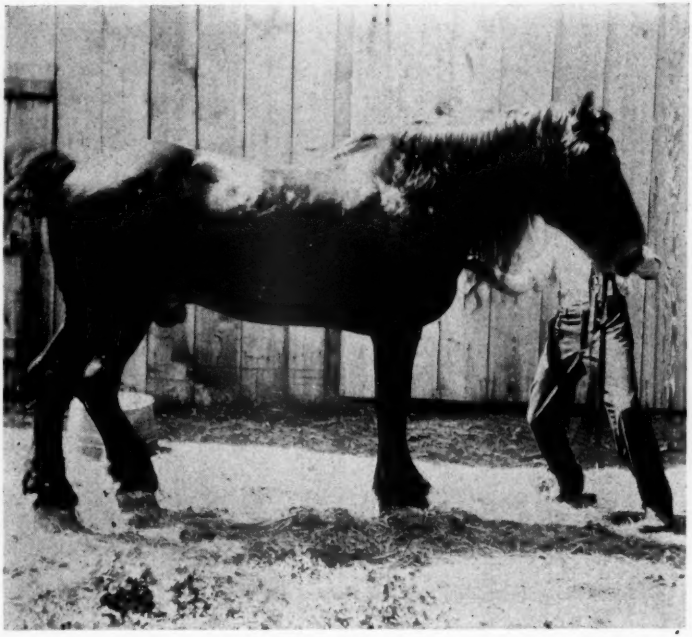
A Publication of the Connecticut State Veterinary Medical Association, New Haven, Conn., shows the loss in Connecticut during the past sixteen years from tuberculosis and from glanders. The pamphlet is well illustrated, showing among other things cuts of two fatal cases of glanders in man.

Catalogues for the school year 1911-1912 may now be obtained from the Division of Veterinary Science of the State Agricultural College of Fort Collins, Colorado; the Kansas City Veterinary College, 1336 E. 15th St., Kansas City, Missouri; and the Chicago Veterinary College, 2537 State St., Chicago, Illinois.

An Outbreak of Dourine in Iowa

Great interest has been manifested by practically all veterinarians of the middle west in the present enzootic of dourine or maladie du coit in Iowa and the knowledge that it has probably existed unrecognized in and about Taylor county, Iowa, for two years or longer.

This disease, which was formerly widespread on the western ranges, was supposed to have been entirely eradicated from this country several



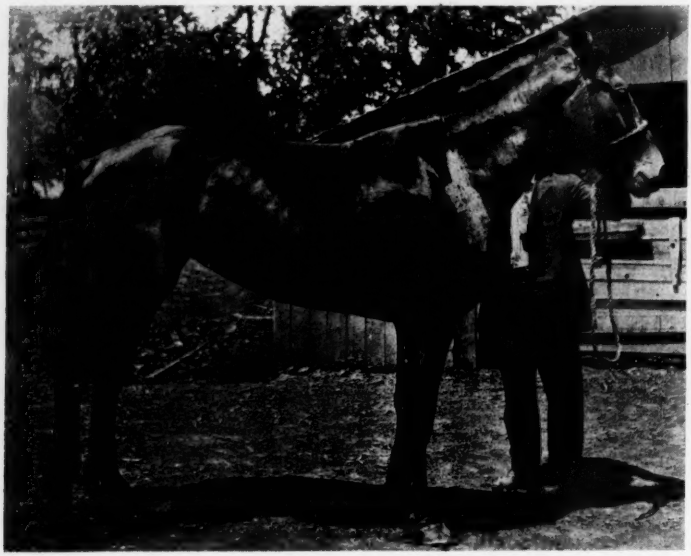
Sultan, a Stable-mate of Gaylord, who died of Maladie du Coit

Sultan shows typical symptoms of dourine. The testicles and the sheath enlarged and pendent; weakness in the hind legs, breaking over at the fetlocks and resting on the toes of the hind feet. He also shows the "whiplash" edema that is to be seen in about one-half the cases in this particular outbreak. He is tucked in the flanks, and losing in condition rapidly. In this outbreak the depigmented areas given in text-books as a constant and prominent symptom of dourine have not been present except in a few cases, and in these they were insignificant in size and number, and quite evanescent in character.

years ago and very few of the younger veterinarians in the farm-section of the western and central states had ever seen a case of dourine. This and the belief that dourine did not exist in Iowa or in the United States and because of the thorough quarantine regulations could not be introduced, was perhaps sufficient reason why the disease was not diagnosed

earlier and taken with the further fact that the symptoms presented in this outbreak differ materially from the symptoms described in textbooks as those of dourine it is not to be wondered at, that an earlier diagnosis was not established.

The first public intimation that dourine existed in Iowa was conveyed in a telegram sent Dr. J. I. Gibson—state veterinarian—by Dr. A. H. Quin of Creston, who stated positively that he had found a case near Lennox. Dr. Gibson at once sent Dr. S. H. Bauman of Birmingham, who had charge of the measures taken for the control of the out-



A Black Mare Belonging to Park Bacon, near Lennox, Taylor County, Iowa

This is another typical case of dourine. Note the tucked flanks, the knuckling, thin condition and the raised plaque with a depressed center in the upper-flank region. This peculiar form of edema is said to be diagnostic of dourine when present. It does not appear, however, in all cases, and even when it does occur is ephemeral in its nature and liable present one day and gone the next. Both this and the "whiplash" edema (which is so named because its appearance is very much like welts that may be raised by a vigorous use of the whip) are commonest over the rump and less so on the neck and shoulders, seldom appearing on the thorax, abdomen or legs. This mare has one ulcer and a few small vesicles in the vagina. There are no depigmented areas on this animal. She is very nervous and stumbles and staggers behind when trotted.

break of dourine in Buchanan County, Iowa, a number of years ago to Lennox, and, after considerable investigation confirmed the diagnosis of Dr. Quin, whereupon the Bureau of Animal Industry was notified, and Dr. Melvin at once detailed Dr. L. E. Day of Chicago to go to Lennox.

Dr. Day reported to the Bureau that in his opinion the disease was dourine and Dr. E. F. Davidson, who has charge of the animal quaran-

tine station at the port of New York, was at once sent to Iowa, and without hesitation pronounced the outbreak to be one of dourine.

Taylor County has since been visited by a large number of veterinarians, including Drs. Melvin and Mohler of the Bureau of Animal Industry, who purchased and took two of the cases back to Washington with them. In serum from a plaque on one of these Dr. Mohler has since found considerable numbers of the living Trypanosome equiperdum, the causative factor in dourine. This is the first time the trypanosome has been found in America.

A typical case of dourine in a stallion, called "Totteur," was exhibited at the Missouri Valley Veterinary Association in Council Bluffs.

The disease has spread slowly and it is probable that not many animals will have to be destroyed. A few more than two hundred are now under quarantine on account of having the disease or of having been bred to animals known to have been infected. The Federal and State authorities have the situation fully in hand and are already disposing of the diseased animals.

A complete account of the outbreak, the symptoms, and the method of its control will be published later.

Recent Publications

Experiment Station Work, No. 53. U. S. Department of Agriculture, Farmers' Bulletin, 451, contains an article on Draft Horses, and another on The Care of Mares and Foals, which must be of interest to veterinarians.

Imported Pure-Bred Animals for which certificates have been obtained are listed in two recent circulars of the Bureau of Animal Industry. One circular contains a list of the horses imported; the other contains the cattle list.

Publicity and Payment Based on Quality. As Factors in Improving a City Milk Supply, by H. A. Harding, New York Agricultural Experiment Station, Geneva, N. Y., Bulletin No. 337. This Bulletin contains a complete account of the operation of the city Milk ordinances in Geneva over a considerable period. It should be in the hands of every milk inspector and everyone interested in the improvement of milk.

Studies on the Biology of the Texas-Fever Tick. Bureau of Animal Industry, Bulletin 130, by H. W. Graybill, Assistant Zoologist, contains a record of further investigations into the life-history of the fever-tick. No veterinarian living in tick-infested districts should fail to procure it.

Bulletin of the Michigan Agricultural College. Division of Veterinary Science, Supplement Vol. 5, No. 10, contains a complete prospectus and catalogue of the new School of Veterinary Medicine which has been established at the Michigan State University.

Some Diseases of Swine. By N. S. Mayo, M. S., D. V. S., Virginia Agricultural Experiment Station, Blacksburg, Va., Bulletin 189. This is a brief well-illustrated and well-written treatise on the commoner diseases of swine, dealing particularly with swine mange, "bull nose," chronic pneumonia or coughing, hog cholera and paralysis of swine.

The Toronto Meeting of the A. V. M. A.

We have said so much about the coming meeting of the American Veterinary Medical Association during the past four months and detailed so many of the advantages of both the meeting and of the trip that we presume all who possibly can have decided to attend. Whether this is the case or not the voluminous correspondence in connection with arrangements for the "Veterinary Special" train out of Chicago and the many verbal assurances of attendance during an extended trip over the Middle West make it a certain prediction that this meeting will see the largest attendance ever gathered at a veterinary meeting.

For the convenience of those who may not have seen our earlier announcement we would say that the Chicago Veterinary Society and the Illinois State Veterinary Medical Association have arranged for a special train to carry their members in a body from Chicago to Toronto, and we want all veterinarians from north, south and west of Chicago who attend the Toronto meeting to arrange to go on this special train and thus enhance the pleasure of your trip and ours.

The advantages of a special train are many. Let it first be understood that the cost of tickets good on this train is no greater than the lowest excursion fair on the regular trains. The opportunities on a train of this kind for renewing old friendships and making new acquaintances although the time is short are superior even to the opportunities the meeting itself affords. This is the greatest advantage of the "Veterinary Special" and it is a truly important one. The service on the special train will be much superior to that afforded by the regular trains. The running schedule alone is four to six hours shorter than on the regular trains, permitting us to leave Chicago late in the afternoon—at five o'clock—and yet be in Toronto in time for breakfast the following morning.

The fare to Toronto from Chicago and various other points is given below. If a Pullman is taken from Chicago, $3.00 should be added to this for a lower berth or $2.40 for an upper berth.

It is best in most instances to purchase tickets from your home to Toronto and return rather than to purchase to Chicago and then from Chicago on, since the through ticket is in most cases the cheaper of the two and it always avoids any inconvenience there may be attending the transfer of baggage from one road to another. The tickets may read over *any* road to Chicago, but they *must* read via the Wabash and Canadian Pacific from Chicago to Toronto to be used on the "Veterinary Special"—an exception to this is the case of Michigan veterinarians who may join the special at Detroit.

It is the usual custom in attending conventions to leave home as late as possible and go direct to the meeting by the shortest route, making all side trips and excursions on the return trip. The schedule of the "Veterinary Special" has been arranged to suit this custom.

Many will doubtless want to return via boat on Lake Erie. This may be done by purchasing the tickets going via the direct line (the one the "Veterinary Special" takes) and returning via *Buffalo* and Detroit. This is a more circuitous route and the tickets will cost two to three dollars more than they will both going and returning direct, but the advantages of the trip are more than worth the extra cost and the extra time it takes. Tickets via Buffalo and Detroit will be honored on steamers of the Detroit and Cleveland Line, Northern Steamship Line, or Anchor Line on Lake Erie. The boat trip occupies about fifteen hours and is a truly delightful one. The boats on Lake Erie are great steamships ranging up to 20,000 tons' capacity or as large as were the Atlantic liners twenty years ago. The traffic by lake boats is enormous; it may not be generally known, but it is a fact nevertheless that more boats pass Detroit in a year than put in at London or Liverpool.

Owing to the varied times at which veterinarians from the North, South and West will arrive in Chicago the plan for a definite entertainment for the ladies by the Chicago Veterinary Society has been abandoned and instead a suite of rooms with maids in attendance will be retained at the Palmer House, State and Monroe streets, for the convenience of ladies accompanying veterinarians on the "Veterinary Special." The ladies arriving in Chicago at any time Monday are invited to go to these rooms as guests of the Chicago Veterinary Society to rest and prepare for the remainder of the journey. Wives of Chicago veterinarians will call at the hotel during the day for the purpose of making the acquaintance of the visiting ladies and accompanying such as care to go on shopping or sight-seeing tours among the world-famous shops of Chicago or the delightful parks, museums, art institutes and other attractions of which Chicago possesses many.

The veterinarians arriving at Chicago before the departure of the "Veterinary Special" Monday are requested to call at the Chicago Veterinary College, 2537 State street, where a committee of the Society will be in waiting. The character of the entertainment will be decided

upon at the next meeting of the Society, too late to announce in this issue. It is, however, assured that the day spent at Chicago will be ever remembered as one of the interesting parts of the trip to the Forty-eighth Annual Meeting of the American Veterinary Medical Association.

The Toronto meeting of the A. V. M. A. will without doubt be the largest, the most important, the most instructive and the most interesting one that has ever been held. The place of meeting, the ambitions of the local committee on arrangements, the distinguished members of the profession who will be present, and the character of the programme of each division, assure to the members, to the visitors and to their families a splendid week's entertainment.

Every veterinarian who possibly can should attend and he should take his wife with him if he has one. All passing through Chicago enroute are urged to accept the invitation of the Chicago Veterinary Society to spend Monday, August 21st, as its guests and above all to be of those who go on the "Veterinary Special."

In order that the final arrangements may be brought to a close all veterinarians who intend to take advantage of the Veterinary Special are urgently requested to apply for reservations at the earliest possible moment. The train as previously announced will leave Chicago from the Dearborn St. Station, on the Wabash Railroad, Monday evening, August 21st, at 5:00 o'clock, arriving in Toronto at 7:00 the following morning, thus giving ample time to prepare for the opening session which convenes some three hours later.

All are again reminded that the rates offered are much lower than those granted on the certificate plan. For the benefit of those who may not have read the previous announcements we quote herewith the round-trip rate from the principal points west and northwest:

Chicago	$14.60	St. Paul	$30.60
Milwaukee	18.00	Denver	54.60
Minneapolis	30.60	Beloit	18.15
Madison	19.80	Racine	17.10
Janesville	18.25	Dubuque	22.00
Rockford	18.00	Cedar Rapids	23.70
Des Moines	25.10	Kansas City	29.60
Omaha	29.60	Davenport	21.60
St. Louis	21.40	Wichita	37.90

All tickets are good returning thirty days from date of sale.

Pullman accommodations on the "Veterinary Special" (or any regular train) from Chicago to Toronto may be had at the following rates:

Double lower berth	$3.00
Upper berth	2.40
Drawing room	11.00

There will be a special sleeper set aside for members unaccompanied by ladies. This car will be known as the "Stag Car" and all desiring space in this car should so specify when making Pullman reservations.

A special *table d'hote* dinner will be served on this train en route and breakfast can be secured in Toronto. The dinner will be served for seventy-five cents and will be equal to the $1.50 *a la carte* dining-car service on the regular trains.

Passenger representatives of the Wabash-Canadian Pacific Line will accompany the party, attending to every detail and assisting in making the trip a most pleasant one.

Full information regarding rates from other cities, train service, and details concerning additional side-trips, also Pullman reservations, can be had on application to the undersigned Committee or addressing H. L. Purdy, Passenger Agent Wabash Railroad, 68 West Adams street, Chicago, Illinois.

We hope to have the pleasure of your presence among the party, which we are sure will add to the pleasure of the occasion, with the further assurance that everything will be done for your comfort and toward making the trip one to be remembered with much pleasure.

L. A. MERILLAT, V. S.,
1827 Wabash Ave., Chicago, Ill.

D. M. CAMPBELL, D. V. S.,
1920 Wilson Ave., Chicago, Ill.

Transportation Committee.

Hotels in Toronto

The local committee of the American Veterinary Medical Association have issued the following circular giving the names, locations and rates of hotels in Toronto which are recommended to those attending the A. V. M. A. meeting August 22nd to 25th.

NAME OF HOTEL AND LOCATION		PLAN	NO. OF ROOMS	RATES
Walker House	York and Front Sts.	American	200	$2.50 per day; with bath, $3.00
The New Somerset	436 Church St.	American	15	$2.00 per day
Hotel Mossop	56 Yonge St	American	55	$1.50 to $3.00 per day
Hotel Winchester	537 Parliament St.	European	37	$1.00 and $2.00 per day
Kerby House	196 Queen St. W.	American and European	28	$1.00 to $3.00 per day
Gladstone House	1214 Queen St. W.	American	66	$2.50 per day
Gibson House	140 Queen St. E.	American and European	22	$1.50 American; $1.00 European
PRINCE GEORGE	91 York St. (Headq's).	American	225	$3.00 per day; with bath, $3.50
Elliott House	117 Church St.	American	67	$2.50 per day
Hotel Aberdeen	114 Queen St. W.	American and European	26	$1.50 American; $1.00 European
Hotel Daly	27 Simcoe St.	American and European	76	$1.75 American; $1.00 European
Hotel Municipal	67 Queen St. W.	American	23	$2.00 per day
Queens Hotel	78 Front St.	American	200	$3.00 to $4.50 per day
The Russell House	215 Yonge St.	American	35	$1.50 and $2.00 per day
St. Charles	70 Yonge St	European	13	$1.50 and $2.00 per day
The Boulevard	116 Queen St. E.	American	16	No rate given
Hotel Hassard	8 Terauley St.	American	27	$1.50 and $2.00 per day
Vendome	283 Yonge St.	American and European	36	$1.00 to $3.00 per day
Hotel Gerrard	399 Parliament St.	American	20	No rate given.
King Edward	37 King St. E.	European	400	$3.00 per day up
Hotel Grosvenor	493 Yonge St.	American	28	$2.00 and $3.00 per day
The Palmer	146 King St. W.	American and European	130	$1.00 to $2.50 per day
Empress Hotel	339 Yonge St.	European only	59	75c. and $1.00 per day
Tremont Hotel	163 Yonge St.	American	73	$1.50 and $2.00 per day
Grand Union	180 Front St. W.	American and European	160	$1.00 to $2.50 per day

N. B.—Get information as to most direct street car service to convocation hall at your Hotel Office. There are numerous other hotels in the city. PROCURE ROOMS IN ADVANCE

Pointed Opinions on Live Topics

BY READERS OF

Veterinary Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Cattle Poisoning

Owing to the drought this season in this locality, cane has made a very slow growth, being dwarfed and wilted.

Milk cows eating a very little of this cane—one or two mouthfuls—die in most cases in from one-half hour to twenty-four hours.

Heifers and steers eating the same cane do not show any unusual symptoms.

Out of ten cases, eight have died showing the following symptoms:

A great weakness of posterior extremities, pain, profuse diarrhea, sometimes admixed with blood, temperature 102 to 104° F., small thready pulse, 50 to 60 per minute, accelerated respiration, 30 to 40 per minute, bloody mucous discharge from nostrils, and crepitant rales. All parts of body are cool to touch, the animals go down at once and remain down with very little struggling. There is slight tympanites, but on passing the trocar, very little gas is relieved.

Post-mortem Lesions: The blood is very dark in color; there is congestion of rumen, the contents of which are very moist, with much gas diffused all through it, in fact frothy and foamy in some parts. There is very little cane to be found in the rumen. It seems like one or two mouthfuls of it is all that is necessary to cause great disturbance. All else is normal except a slight inflammation of the small intestines, and a slight congestion of the lungs.

Treatment: I used purgatives, stimulants and antiferments.

Rumenotomy was performed on one animal, which is making a good recovery.

My theory is that when this cane reaches the rumen it causes the elaboration of a gas which is very poisonous and as soon as it is absorbed causes these great disturbances and in most cases death.

C. R. Walter, D. V. S.

Tulsa, Okla.

—

[The sudden death of cattle, young cattle and steers as well as milk cows, from eating small amounts of green cane or sorghum grown during very dry seasons is common. Such poisoning has been attributed to a glucoside the plant contains under these conditions

which is capable of being converted into hydrocyanic (prussic) acid.

Prof. Pammel (*Manual of Poisonous Plants*, page 85) says:

"It is well known that sorghum grown in dry climates produces a greater amount of glucoside which is capable of being converted into hydrocyanic acid than in more moist regions. Some writers even assert that the drought depauperates the plant and that in the nodes there are considerable quantities of potassium nitrate."—ED.]

NEBRASKA has recent veterinary legislation which provides for the registration of stallions and jacks; appropriates $25,000 for indemnification of owners having horses or mules destroyed by order of the State veterinarian; provides for the manufacture and distribution of hog cholera serum; provides for the care of injured and sick animals and the punishment of negligent drivers of horses, who tie them on the street in cold weather and otherwise abuse them.

Illinois State Veterinary Meeting

Nearly two hundred veterinary medical men—physicians of the highest rank, editors of medical papers, state veterinary officials and professors and instructors in various veterinary colleges of the country—comprised the unusually large attendance at this the midsummer meeting of the state association.

The afternoon session was featured with an address by Dr. W. G. Martin of Kankakee on "Legislative Progress." Dwelling on the subject of state live stock sanitation, Dr. A. T. Peters, director of the State Biological Laboratory, delivered an instructive address on the proper treatment of hog cholera with the new serum which is manufactured and provided free of charge by the state.

Among the more notable delegates which made up the most representative attendance ever known to a midsummer session, were A. H. Baker, Dean of the Chicago Veterinary College; C. H. Merrick of Oakawa, who is an assistant state veterinarian; J. H. Crawford, president of the Association, of Harvard; L. A. Merillat, secretary, of Chicago; President Hauer of the State Board of Live Stock Commissioners; John Scott of Peoria, State veterinary examiner; J. M. Wright, state veterinarian, and D. M. Campbell, editor of the AMERICAN JOURNAL OF VETERINARY MEDICINE.

—*Peoria* (Ill.) *Herald.*

The Indiana State Veterinary Examining Board held the regular midsummer meeting in Indianapolis, July 14th. More than one hundred applicants for license to practise were examined, but only eighty-five licenses were granted.

The Board is organized as follows: W. F. Myers, Fort Wayne, president; C. I. Fleming, Terre Haute, vice-president; O. L. Boor, Muncie, secretary, and J. J. Herron of Tipton, treasurer.

—*Indianapolis Star.*

Veterinarians Hold Session in Omaha

Sixty delegates to the seventeenth annual convention of the Missouri Valley Veterinarians' Association and their ladies gathered last evening for a banquet at the Paxton hotel.

An interesting and entertaining program of solos, readings, together with short talks and lectures on professional topics, followed the repast.

The entertainment opened with a song "Iowa," by Dr. J. R. Gibson, state veterinarian of that State. Dr. A. Bostrom, state veterinarian of Nebraska, gave an interesting talk on this State as a veterinary field.

"The Veterinarian and the Biological Manufacturing Firm," was the title of a short address by H. P. Rasmussen, manager of the Pasteur Laboratories of America.

"State Sanitary Control" was the topic taken by Dr. J. I. Gibson. The toast to the ladies was made by Dr. S. Stewart, dean of the Kansas City Veterinary College.

Dr. D. M. Campbell of Chicago, editor of the AMERICAN JOURNAL OF VETERINARY MEDICINE, told of the plans for the meeting of the American Veterinary

Medical Association to be held in Toronto August 22 to 26.

A pleasing reading was offered by Mrs. Ross Miller.

Other speeches were made by Dr. H. C. Simpson of Denison, Ia., secretary of the Missouri Valley Veterinarians' Association; Dr. B. F. Kaupp of Fort Collins, Colo., pathologist of the Colorado Agricultural College, and Dr. C. E. Stewart of Chariton, Ia., president-elect of the Missouri Valley Veterinarians' Association.

A delightful musical entertainment comprised a solo by Dr. Glen Miller, a duet by Prof. Ross Miller of Council Bluffs and Earl Hamler of Atlantic, Ia.

At a meeting in the afternoon at the Paxton, officers were elected for the ensuing year as follows:

Dr. C. E. Stewart of Chariton, Ia., president; Dr. R. F. Bourne of Kansas City, first vice-president; Dr. J. A. De Cou of Holdrege, Neb., second vice-president, and Dr. H. C. Simpson of Denison, Ia., secretary and treasurer.

Executive committee: Dr. Frank Jellen of South Omaha; Dr. B. F. Kaupp, Fort Collins, Colo.; Dr. A. J. Treman of Lake City, Ia.; Dr. S. Stewart of Kansas City, Mo., and Dr. D. O. Knisely of Topeka.

The veterinarians attended a clinic at the Hall and Morris Hospital, 2858 Farnam street.—*Omaha Daily Bee.*

Iowa has a new Animal Health Commission which was recently created by an act of the legislature. The first meeting of this commission was held at Des Moines, July 13, at the call of State Veterinarian Dr. J. I. Gibson, who is executive officer of the commission. The other veterinarians on the commission are Dr. Thomas Downing of Washington, and Dr. Geo. Blanche, of Belle Plain. The stockmen on the commission are Mr. P. A. Saunders, of Manilla and Mr. Frank Kinsley, of MacGregor. The plan of the Commission is to formulate animal quarantine and health laws of such stringent nature that the introduction to Iowa of contagious diseases from other States will be impossible.

Governor McGovern of Wisconsin has appointed Dr. A. H. Hartwig of Watertown state veterinarian to succeed Dr. D. B. Clark. This is the culmination of a long fight in Wisconsin as to whether the State Board of Veterinary Examiners should license farmers with no veterinary training for tuberculin testing. Dr. Hartwig has led the opposition to this practice.

Dr. David G. Morberly has purchased the St. Joseph Veterinary College and reorganized it throughout, retaining but three members of the former faculty and placing it in the first rank of veterinary colleges.—*Star*, Grant City, Mo.

The new veterinary building at Iowa State College is simply an indication of the progress that is being made in the care and treatment of domestic animals, as well as in live stock sanitation.

That the division of veterinary medicine can be of inestimable value to the live stock industry when once properly situated, is an undisputed fact. Thousands of dollars' worth of valuable live stock is lost every year as a result of preventable diseases alone. The frequent outbreaks of mould poisoning among horses is but one of the many examples of the preventable losses. The great progress made in recent years in the prevention of hog cholera is another example of what can be done by thorough scientific work along these lines. This discovery alone is destined to save the hog raisers of this country millions of dollars.

In another year Iowa State College can pride herself in having one of the best equipped and most up-to-date veterinary colleges of this, if not of all countries.—C. H. Stange, in the *Jefferson* (Ia.) *Bee.*

The South Dakota Veterinary Medical Association held its annual meeting at Watertown, July 11th and 12th. A profitable meeting is reported.

The many friends of Dr. Hiram Reagor, Beaver City, Nebr., will be pained to learn of his untimely death which occurred July 4th as a result of being thrown from an automobile on his

way to Arappahoe, Nebr., to pitch for his home ball team.

A SERIOUS outbreak of anthrax at Beaumont, Texas, is engaging the attention of veterinarians, stockmen and state officials.

Veterinarians Needed in Washington

Dr. R. N. Mead, a veterinarian in the employ of the Agricultural Department, has been here the past few days, looking after diseased live stock. There were several cases of trouble in herds of sheep and no one knew what the disease is, hence Government experts were called upon to name the disease and find a remedy.

Larson Bros., sheepmen of Rawlins, lost about 400 head because of a mysterious disease, which the veterinarian pronounced to be due to a grub in the head. The remedy is trephining, which takes about five minutes to the sheep. The grub, being incisted, is easily discovered by tapping on the skull and can be removed without injury to the sheep [!].

Louis Severson came in to meet the doctor and take him out to see what was the trouble with his herds, he having lost quite a number of late. We have not learned at this time what the trouble was.—*Tacoma* (Wash.) *Ledger*.

THE semi-annual meeting of the Virginia State Veterinary Medical Association was held at Norfolk, July 14, with Dr. J. G. Ferneyhough, of Burkeville, presiding. Papers were presented by Drs. M. Powhattan, H. F. Willis, S. C. Smith, R. R. Clark, William Geo. Black, W. Lloyd Vaughn-Floyd, W. G. Christman and others. An unusually good meeting was reported.

The Virginia State Veterinary Examining Board met during the meeting of the State Association, Thirteen applicants for license to practice were examined.

EIGHTEEN candidates for license to practice presented themselves before the State Veterinary Examining Board of Minnesota, at St. Paul, July 11th. The Minnesota Examining Board consists of Dr. G. A. Mack, Stillwater, secretary, and Dr. W. Hayman, Dr. L. Hay, Dr. J. A. Dalmore, Dr. J. M. Lambert, Dr. A. J. Tupa.

Texas Legislation

After many attempts and much delay the veterinarians of Texas have finally succeeded in securing the enactment of an excellent veterinary practice law.

The act became effective on June 11 of this year, and the Governor has appointed the following well known veterinarians of that State as members of the State Veterinary Medical Examining Board: E. W. Watson, of Corsicana, president; F. G. Cook, of Paris, secretary; J. E. Wilkins, of Greenville; G. Parker, of San Angelo; W. A. Knight, of Justin, and F. Swift, of Austin, members. The law provides that the board shall be appointed from eligible veterinarians recommended by the Texas Veterinary Medical Association and that no two shall be graduates of the same veterinary college.

The Veterinary Medical Examining Board shall meet in regular annual session in June of each year and in special session at the call of the president. Provision is made whereby the secretary of the board may grant temporary licenses to practice which shall

expire at the succeeding annual meeting of the board.

It is required that all persons who are licensed to practice in Texas shall pass an examination given by the State Veterinary Medical Examiners, and no veterinarian shall be eligible for examination except he possesses a diploma from a recognized veterinary college. Persons in the State of Texas engaged in veterinary practice for at least one year prior to the enactment of this legislation, are privileged to practice without an examination until January 1, 1913, that is, they are given a year and a half in which to prepare for and take the examination; and, further, persons who have made veterinary practice their principal occupation in the State of Texas for five years preceding the enactment of this law are eligible to registration without an examination, but may practice only in the counties in which they are now resident.

Members of the Board of State Veterinary Medical Examiners receive for their services $10.00 per day while in actual service at meetings of the Board, and also their actual hotel and traveling expenses for each meeting. The Board has the right and power to revoke any license upon evidence that it has been secured by fraud or that the holder of the license has been guilty of unprofessional or dishonorable conduct, and it is further made the duty of the Board of Veterinary Medical Examiners or any member thereof to report any violation of the Veterinary Practice Act.

The Examining Board further has the power to make reciprocal arrangements with similar boards of other states whereby due credit for state and territory license will be allowed in the State of Texas and vice versa, but no such arrangements shall be made with any state where a satisfactory standard of requirements is not maintained.

This Texas Law has many commendable features, one of them being that the examining board is paid for their services as any board should be; another is the fact that it is made the duty of the board to report violations of the Veterinary Practice Act; another commendable feature is the one which permits those who are able to register under the "Existing Practitioner" clause to practice only in the county in which they are resident. This feature of the law is aimed at the itinerant or traveling empirics.

Report on Diseases

Dr. B. F. Kaupp, Fort Collins, Colorado, gives the following outline of the report that will be made by the committee on disease at the Toronto meeting of the A. V. M. A.

General Report of Committee on Disease.
By B. F. Kaupp, Chairman.

SECTIONAL REPORTS

The Recurrence of Dourine in the United States. By John R. Mohler.

Foot Evil in Horses and Mules
Sore Mouth in Dogs.
Dr. W. H. Dalrymple.

Serums, Vaccines and Serum-Vaccine Therapy.
Dr. A. T. Kinsley.

The Laboratory and the Practitioner.
Dr. Chas. H. Higgins

The Effects of Nuclein Upon the Blood.
Dr. B. F. Kaupp.

Hematidrosis

In the July issue of the *American Veterinary Medical Journal*, Dr. Gough, of Benton, Ky., reported an interesting case of hematidrosis. This is of considerable interest and further reports of such cases would no doubt clear our understanding of the pathology of this condition. Hematidrosis as usually understood is a condition in which there is an escape of blood from the sudoriferous glands and a discharge of the extravasate on to the skin surface, or there is a discoloration of the discharged perspiration by hemoglobin.

Hematidrosis may occur at any period of life but in Dr. Gough's case, which was a two-day-old mule colt, it is quite probable that it was the result of a hemorrhagic diathesis (hemophilia).

Hemophilia may be either inherited or acquired. The cause of hemophilia has not been determined but inherited hemophilia is probably due to lack of coagubability of the blood and some have claimed that it is specifically the result of the presence in the blood of antithrombin. In acquired hemophilia, that is, in cases in which the hemorrhage does not occur for from a few days to even months or years after birth, hemophilia may be caused by other disease processes. Inherited hemophilia may be evident at the time of foaling and is usually characterized by persistent hemorrhage from the umbilical vessels immediately after foaling or more rarely it is characterized by hemorrhages from the skin or mucous membrane, however, inherited hemophilia may not be noticeable at the time of birth but may occur any time in life and is then characterized by persistent hemorrhage from trivial injuries.

The etiology of acquired hemophilia is obscure. It is usually associated with some diseases or disease process as purpura hemorrhagica, septicemia, anthrax, phosphorous poisoning, venom intoxication, etc., although there may be no determinable associated condition or apparent causes. It is frequently difficult to differentiate inherited and acquired hemophilia, particularly if the inherited hemophilia sometimes occurs after birth or the etiology of the acquired type is obscure.

The lesions of inherited hemophilia are insignificant. In acquired hemophilia, the tissue changes are those usually found with the associated diseases.

As to treatment, various remedial agents have been recommended. Adrenalin appears to be an efficient agent. In human practice it has been found that the injection of small quantites of horse blood serum is of considerable value. The treatment at best will only be empirical until the specific cause of the condition has been determined.

Because of the lack of general knowledge of this condition, it is desirous that more cases be reported and it is hoped that every practitioner will report all of his cases of heomphilia for the benefit of others. A. T. KINSLEY.

Kansas City, Mo.

Just as we go to press we have learned of the death, from glanders, of Dr. H. E. Talbott, of Des-Moines, president of the Iowa State Board of Veterinary Examiners.

Reply to "A Case of Septicemia

Dr. R. L. Van Sickle has not given us very full data on which to form an opinion. It is rather important to know how long after the owner removed the placenta, and how long after the operation the severe symptoms occurred. I was called to a somewhat similar case a number of years ago, and on inserting the hand into the vagina, I at once came in contact with intestines. This owner had done a complete job and removed the greater part of the uterus with the placenta. He said the cleanings were rather hard to get away.

I have quite recently brought what I diagnosed as a case of septic metritis to a successful termination on the following treatment: Only one douche, very prolonged, about 20 gallons boiled water with an antiseptic. I would have repeated it but the straining was very painful. Parke Davis & Company's nuclein solution and normal salt, of each 5 Cc. hypodermically night and morning for five days; Colorado Agricultural College antisuppurative vaccine 1 1-2 Cc. at once, with two later injections of 2 Cc. each; fluid extract of echinacea 1 or 2 drams every few hours, and such stimulants and depletives as seemed indicated.

If it had been possible for Dr. Van Sickle to have made an autopsy, it is very likely that the cause of death would have been clear. He apparently invites criticism of the treatment. In douching the mare I have never felt satisfied that the benefits counterbalance the distressing straining usually set up; frequent douches I am almost sure are harmful. The stimulants given were no doubt beneficial and the advisability of acetanilid depends on the heart action. Supposing this was a septic case, at 105.2° F., I should expect a heart that would not stand half an ounce of acetanilid. I am more inclined, however, to believe, from the apparently rapid course of the disease as outlined, that the owner did the mischief.

A. W. WHITEHOUSE.

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